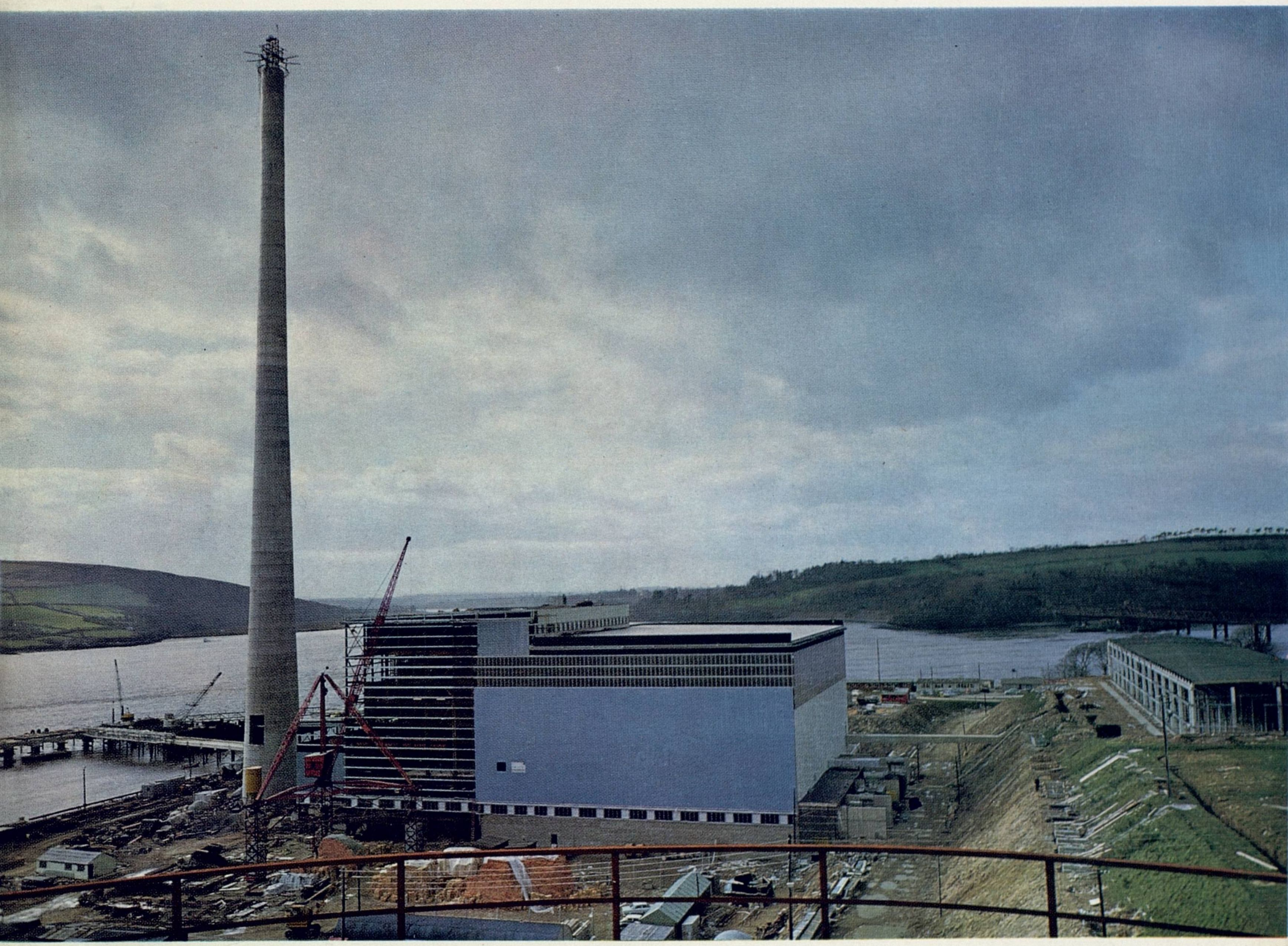
ELECTRICITY SUPPLY BOARD · IRELAND

40th ANNUAL REPORT

for the year ended 31st March 1967 including report on Fisheries



Board Members

T. MURRAY, B.A., *Chairman*

HENRY KENNEDY, M.A., D.Sc.

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Secretary

J. G. GARGAN, B.L., F.A.C.C.A.

Chief Engineer

A. HARKIN, M.E., F.I.E.E., M.I.Mech.E.

Chief Accountant

L. J. BARRY, F.A.C.C A.

ELECTRICITY SUPPLY BOARD · Lower Fitzwilliam Street · Dublin 2 · IRELAND

Pr. 9400



General Outline of the

GENERATION and TRANSMISSION SYSTEMS

31st March, 1967

- HYDRO STATIONS
- STEAM STATIONS
- STEAM STATIONS PROJECTED
- 220 KV TRANSFORMER STATION
- 220 KV TRANSFORMER STATIONS PROJECTED
- 110 KV TRANSFORMER STATIONS
- 110 KV TRANSFORMER STATIONS PROJECTED
- 220 KV LINES
- 110 KV LINES
- 110 KV LINES PROJECTED
- OTHER HIGH VOLTAGE LINES

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COVER—Great Island Generating Station Co. Wexford, nearing completion

TO THE MINISTER FOR TRANSPORT AND POWER

REPORT of the ELECTRICITY SUPPLY BOARD
LOWER FITZWILLIAM STREET
DUBLIN 2

The Board presents the Annual Report and Accounts for the year ended 31st March, 1967, in accordance with Section 7 (4) and Section 32 (1) of the Electricity (Supply) Act, 1927.

Electricity Output

The total electricity output for the year was 3,851 million units, an increase of 305 million units over the previous year. This rise in demand of 8·6% was in accordance with expectations.

Electricity supplied to the system was provided as follows:

	million units sent out	percentage
hydro	843	23·0
peat (sod)	328	9·0
peat (milled)	604	16·5
coal (native)	73	2·0
oil/coal	1,813	49·5

Generation from native sources was 50·5% of total output.

Financial Results

The accounts for the year show a surplus of revenue over expenditure of £252,880. As announced in last year's Annual Report, an application for an increase of approximately 7% in electricity charges was made in compliance with the provisions of the Prices Acts, 1958 and 1965. The Minister for Industry and Commerce sanctioned the price increase in September, 1966, subject to later consideration by the Electricity Prices Advisory Body. The revised electricity charges took effect from the November/December billing period and yielded additional revenue of £820,000 for the year. This amount, when combined with substantial savings in fuel costs due to above-average output from the hydro-electric stations and substantially increased production from oil stations, converted an expected major deficit into a moderate surplus.

Shortly after the close of the year, when the improved revenue accruing from a substantial increase in electricity output in March had been evaluated, the Board was glad to advise consumers that the implementation of the decision announced during the year to add turnover tax to the accounts of those affected, as from the 1st April, 1967, was postponed pending further review in the autumn of this year.

Revenue from sales of electricity totalled £26,690,000, an increase of £2,613,000 over the previous year of which £1,793,000 was due to increased sales and £820,000 to increased charges, as stated above.

The summarised revenue and expenditure figures are:

	Year ended 31st March, 1967	Preceding year
	£	£
Gross revenue (including miscellaneous revenue)	26,769,673	24,160,850
Less working expenditure on wages, fuel and other materials, overheads and turnover tax	14,885,597	13,059,553
Balance	£11,884,076	£11,101,297
From this balance the following charges are met:—		
Interest (net)	5,147,494	4,923,486
Provision for plant renewal	4,530,000	4,183,000
Capital redemption	1,953,702	1,751,658
	£11,631,196	£10,858,144
Leaving surplus	£252,880	£243,153

Taking credit for installations and merchandise profits and allowing for the deficit on fisheries, the result for the year as shown in the Net Revenue Account (No. 8) is a surplus of £270,608.

Merchandise sales for the year totalled £1,718,060, an increase of £189,133 or 12·4% over the previous year. The net profit was £15,446 compared with a loss of £26,988 for 1965/66. E.S.B. branded refrigerators and washing machines which were manufactured by Irish companies were successfully introduced during the year.

The net profit from the Board's installation activities was £41,267 against £46,371 in the previous year.

It was considered necessary to augment the Contingencies Reserve which had stood at £1,500,000 since 1960/61. A transfer of £250,000 to the reserve from the surplus available has, accordingly, been made and the new reserve figure of £1,750,000 is in line with the desirable level of reserve, equivalent to 1% of the capital employed in the Board.

The reserve for accident liability for staff not covered by the Social Welfare Occupational Injuries Act, 1966, was increased to £25,000 and the flotation expenses and discounts amounting to £218,846 on the £7,000,000 of stock issued in March, 1967, were written-off from the revenue surplus.

After providing for these appropriations and taking credit for the balance, £275,999, brought forward from 1965/66, there remains a balance on revenue account of £53,713 which is carried forward to next year.

Capital

The increasing acceptance of electricity by the Board's customers for a great variety of purposes necessitates the investment of capital at a growing rate to increase the capacity of the generating stations and of the transmission and distribution networks so as to maintain the quality and continuity of supply. This work is widespread and continuous in cities and towns as well as throughout the 26,000 square miles of countryside traversed by the Board's networks. To help in the financing of these developments, the Board successfully issued £7,000,000 of 7% stock at 98 in March, 1967. Capital investment in the construction of new generating stations during the year amounted to £5,040,000, in the transmission networks amounted to £1,820,000 and in the distribution networks to £5,400,000, of which £2,300,000 was for the purpose of extending the mains to new consumers and the balance to strengthen the existing lines.

Generation

The capacity of the Board's generating plant was increased to a total of 1,169·5 MW. The extension to Ringsend station was completed with the commissioning of a 60 MW oil-fired unit, bringing the station capacity up to 270 MW. The milled-peat fired extension to Lanesborough station was also completed by the commissioning of a 40 MW unit. At Great Island in Co. Wexford work on the first 60 MW unit was well advanced and erection of the second unit had commenced. At Tarbert in Co. Kerry foundations for two 60 MW units were nearing completion and erection of structural steelwork was about to commence.

Orders for turbines and boilers for Pigeon House B station were placed at the end of the year and manufacture had commenced. Piling for foundations was in progress.

On the morning of 9th May, 1966, all generating stations (with the exceptions of Ferbane, North Wall and the hydro stations) were closed down, owing to the fact that operating crews of the generating stations did not pass the pickets placed by the mechanical fitters in pursuance of their strike which began on the 29th April. To avoid "cascading" of the system and serious damage to plant and in order to prepare for the maintenance of a minimum supply for essential purposes, the Board was obliged to shed load on a large scale with consequent inconvenience to many consumers. In the afternoon the pickets were withdrawn and supply was restored to normal by early evening. Pickets were again placed on some stations on subsequent dates causing further disruption of supplies, especially in the case of industrial consumers.

The Board is grateful to its consumers who, during this difficult period, co-operated so readily by voluntarily reducing their demands on the system and in so doing enabled supplies to be maintained during critical periods for essential public services.

Transmission and Distribution

The programme to extend and strengthen the Board's high tension and distribution networks was maintained. Work on the Shannonbridge/Maynooth section of the 220 kV grid was well advanced at the end of the year. The new 220 kV station at Maynooth will be commissioned during 1967 and will strengthen the security of supply to the Greater Dublin area.

Electricity Sales

Despite the somewhat difficult trading conditions which obtained for much of the year, the sales of motive power units showed an increase of 10·7% over the previous year. Domestic demand in urban and rural areas rose by 9·6%.

The development in the utilisation of night space heating by electricity has been substantial and approximately 30 megawatts were installed during the year. This included 18 megawatts of domestic heating and 12 megawatts of commercial and industrial heating. Sales in this category totalled 254 million units (an increase of 17·9% over the previous year) and the revenue amounted to £799,000. This development, apart from the service which it provides to consumers, plays a significant role in the maintenance of a satisfactory load factor in generation output and con-

tributes towards the economic operation of the 60 MW units now operating in Marina and Ringsend generating stations.

The growing interest in improved public lighting was demonstrated by the fact that ten miles of traffic route lighting were installed in Athlone, Ballyshannon, Boyle, Carlow, Dun Laoghaire, Galway, Limerick and Virginia. Thirteen other towns were provided with almost 4,000 mercury fluorescent lanterns.

Rural Electrification

The post-development programme of the Rural Electrification Scheme was curtailed in the first half of the year because of the general shortage of capital. During the latter half of the year it became possible to allocate additional moneys to this project and at the end of the year post development work had been completed in 320 areas and was in progress in a further 61. A total of 4,742 new rural consumers was connected and in all a sum of £1,392,197 was spent on rural networks.

Post-development is carried out in accordance with a systematic plan, area by area, in order to keep capital costs as low as possible. Whilst the Board appreciates that this, at times, causes some delay in arranging connections for prospective consumers in areas not within the immediate post development plan, a departure from this system would be much more costly.

On 1st May, 1966, the Board took over the Boyle, Co. Roscommon, electricity undertaking which was the last of the provincial town undertakings in the country. The change-over, which added 594 new consumers to the Board's networks, was completed on 31st October.

The Board co-sponsored three provincial industrial exhibitions in Counties Kerry, Mayo and Roscommon, two of them in co-operation with County Development Teams. Local manufacturers and several industries participated in these exhibitions which are designed to provide a platform where such enterprises can demonstrate the contribution they make to the community. These exhibitions were highly successful, the attendance in each case exceeding 10,000.

Staff Training

The Board has for some years operated specialised educational and training programmes for its personnel and there have been some notable successes in extern examinations. In line with current national policy for the training of manpower, these programmes are being intensified. The Board has formulated a co-ordinated manpower policy to meet the needs of the future and visualises a significant increase in the amount of special training to be provided at various levels.

Industrial Relations

In last year's Report the Board expressed the hope that a situation could be achieved by agreement in which electricity supplies would be freed from the threat of interruption by strike action.

It will be recollected that, as a consequence of the strike of mechanical fitters from the 29th April to the 20th June, 1966 and its effects on electricity supplies, the Government introduced the Electricity (Special Provisions) Act, 1966, the effect of which is to prohibit certain strikes against the Board where there is a serious disruption of electricity supplies or imminent danger of such disruption. After the settlement of the strike the Irish Congress of Trade Unions made approaches to the Minister for Labour to have the Special Provisions Act repealed. The Minister indicated that he would be prepared to consider repeal of the Act in circumstances where there would be a reasonable assurance of the supply of electricity being maintained and he expressed the view that a voluntary agreement should be negotiated between the Board and its employees which would give him the required assurance.

Negotiations on these lines commenced in February between the Board and the Unions affiliated to the Irish Congress of Trade Unions and are still continuing. Parallel negotiations have also been in progress with four organisations (not affiliated to Congress) representing the majority of the Board's general employees.

Both sets of negotiations are concerned not only with bringing about a situation in which the Electricity (Special Provisions) Act can be repealed but also with the form of the conciliation and/or arbitration machinery which will operate when the two statutory E.S.B. Tribunals are abolished. Progress under this heading has been satisfactory and the provisional procedures as agreed have already been utilised.

The Board looks forward to the successful conclusion of these negotiations and to the emergence of a voluntary agreement with its staffs which will eliminate industrial action in this essential public service and give to the community a guarantee of an uninterrupted supply of electricity.

During the year the "10th round" increase of £1 a week for men and 15/– a week for women was implemented in accordance with the guide lines of the Labour Court and of the Government, in respect of all manual staff and of general employees on salaries up to £1,200 a year.

An agreement was negotiated with the Unions representing manual staffs providing for the introduction of a 40-hour week, on a phased basis, by mid-1969.

The Board took the initiative in preparing an amending superannuation scheme for its manual workers and submitted the scheme to the Minister for confirmation in accordance with Section 6 of the Electricity Supply Board (Superannuation) Act, 1942. The main purpose of the new scheme which, like the existing scheme, is a contributory one, is to permit a manual worker with full service to obtain a half-pay pension and a lump sum retirement benefit equivalent to one year's wages. The new scheme will represent a considerable improvement on the existing scheme which, because it has a fixed maximum pension, does not permit an employee to receive a half-pay pension even though he may have full service.

North-South Interconnection

During the past year discussions have continued between the Electricity Authorities, North and South, to produce a "Joint Statement of Agreed Principles and Intentions" in regard to co-operation on the interconnection of the electricity systems.

The work on this has now been completed and awaits the approval of the Government Departments concerned. Preliminary investigation into the routes for the interconnecting lines has been made and enquiries for main equipment have been issued. The desired date for first commissioning of the North/South interconnection is autumn of 1969, but the meeting of this date depends on when full approval to proceed with financial commitments on the design and constructional programme is received.

Staff

At 31st March, 1967, the numerical strength of the Board's regular staff was 7,382. In addition, there was a temporary staff of 2,205.

The Board again wishes to record its appreciation of the efficient manner in which the staff performed their duties.

(Signed) *T. Murray*, CHAIRMAN.

Henry Kennedy

C. Gordon Lambert

T. MacMahon

Breandán ÓCearbhaill

J. A. Ryan

J. C. Tonge

(Signed) *J. G. Gargan*, SECRETARY
27th June, 1967

CAPITAL

The value of the capital assets brought into commission was £13,266,435 of which £1,780,921 related to rural electrification. The total investment in assets in productive use at 31st March, 1967, was:

	£
Generation	66,979,038
Transmission	18,224,484
Distribution (includes rural £38,156,490)	73,084,216
Premises, equipment, transport, etc.	4,688,596
	£162,976,334

In addition, expenditure of £12,867,915 had been incurred on new capital works still under construction at the end of the year. Accordingly the fixed capital investment is almost £176,000,000.

BORROWING POWERS

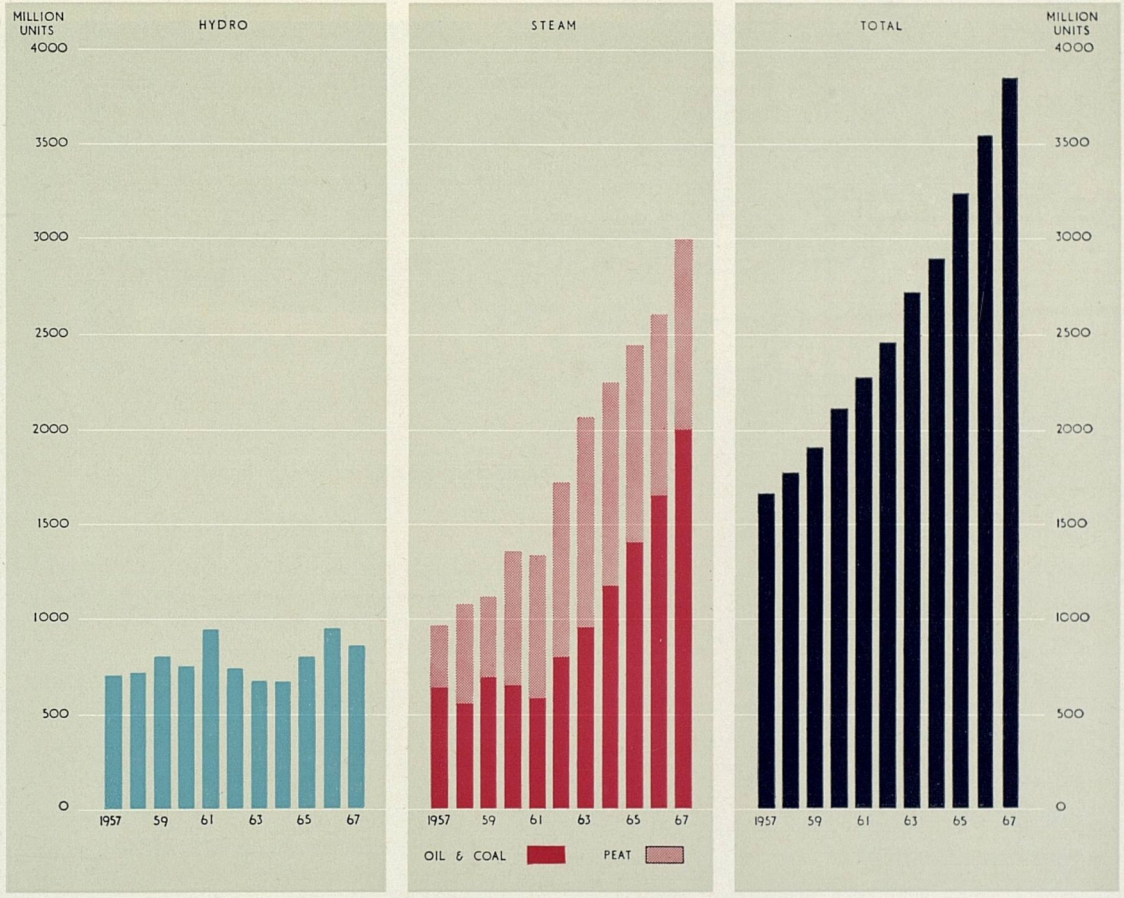
The capital requirements for the year were provided from internal resources, by temporary advances from the Trustees of the Superannuation Funds and from the proceeds of an issue in February, 1966, of £6 million E.S.B. 7% Stock 1986/91. To assist in financing the future capital programme a further issue of £7 million of the same Stock was made in March, 1967 and was fully subscribed on the opening day.

The Electricity (Supply) (Amendment) Act, 1965, authorises a capital expenditure not exceeding £225 million for general purposes, excluding rural electrification. At the 31st March, 1967, the Board had approved expenditure totalling £180,741,665 of which £124,819,844 represented electricity assets in commission, the balance of £55,921,821 representing either work in progress or work approved.

The legislative limit to expenditure on rural electrification is £42 million inclusive of the subsidy for rural electrification provided by the State. At the 31st March, 1967, the amount approved was £39,331,975 of which £38,156,490 represented assets in commission and £1,175,485 work in progress or approved.

ELECTRICITY PRODUCTION

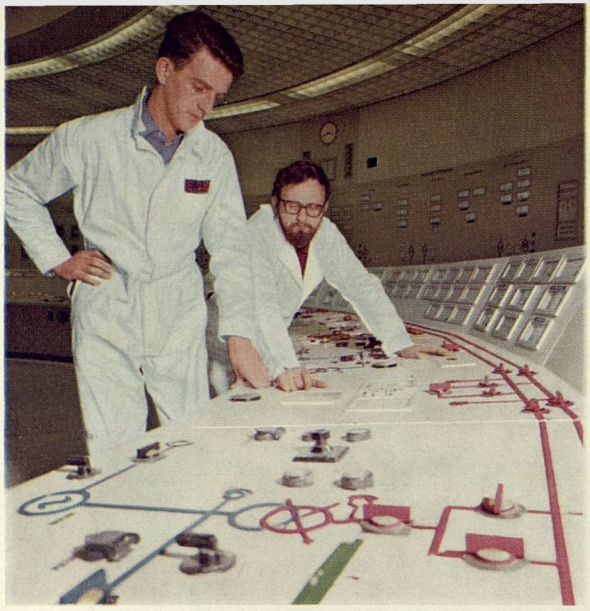
The diagram below illustrates the output of the generating stations each year since 1957.



INCREASE IN UNITS GENERATED

The units generated (and purchased) showed an increase of 305 millions (8·6%) over the preceding year. The annual load factor on the basis of units generated was 49·7%, compared with 49·6% last year.

An analysis of the cost of generation appears in the Electricity Production Account (No. 1).



Trainee engineers at work in Control Room, Ringsend generating station.

GENERATION

The following additional generating plant, amounting to 480 MW, was under construction.

GREAT ISLAND STATION, Co. Wexford

Oil

Work on the first of the two 60 MW units was well advanced and erection of the second unit had commenced.

Scheduled completion dates: 1967 for no. 1 unit and 1968 for no. 2 unit.

TARBERT STATION, Co. Kerry

Oil

Foundations for the two 60 MW units covered by the first development were nearing completion, and erection of structural steelwork was about to commence.

Scheduled completion date: 1969/70.

PIGEON HOUSE 'B' STATION, Dublin City

Oil

Orders for the turbines and boilers for the initial development of two 120 MW units were placed and manufacture had commenced. Piling for the foundations was in progress.

Scheduled completion dates: 1970/71 for no. 1 unit and 1971/2 for no. 2 unit.

The commissioning during the year of a 40 MW milled peat fired unit at Lanesborough and the last of three 60 MW oil fired units at Ringsend brought the total installed capacity of the Board's generating stations to:

	MW
hydro plant	219
steam plant (sod peat)	117·5
steam plant (milled peat)	290
steam plant (coal/oil)	543
	1,169·5

This total includes 90 MW of old stand-by plant at Pigeon House and the four 5 MW stations designed to burn hand-cut peat.

Machine hall, Ringsend generating station.



WATER STORAGE AND RIVER CONTROL

The inflows at the hydro stations varied between 100% and 126% of the long-term average flows.

The important hydrometric figures for the hydro stations are given in Appendix 8.

The total average inflows for the calendar year 1966 were:—

	M^3/Sec
River Shannon at Killaloe	213·2
River Liffey at Pollaphuca	12·4
River Liffey at Leixlip	20·4
River Erne at Ballyshannon	115·5
River Lee at Inniscarra	32·7
River Clady at Gweedore	3·9

WATER POWER INVESTIGATIONS AND HYDROMETRIC SURVEY

The collection of hydrometric data on the Rivers Shannon, Liffey, Erne, Lee and Clady was continued. Data were also collected with a view to the investigation and possible later development of further water power resources.

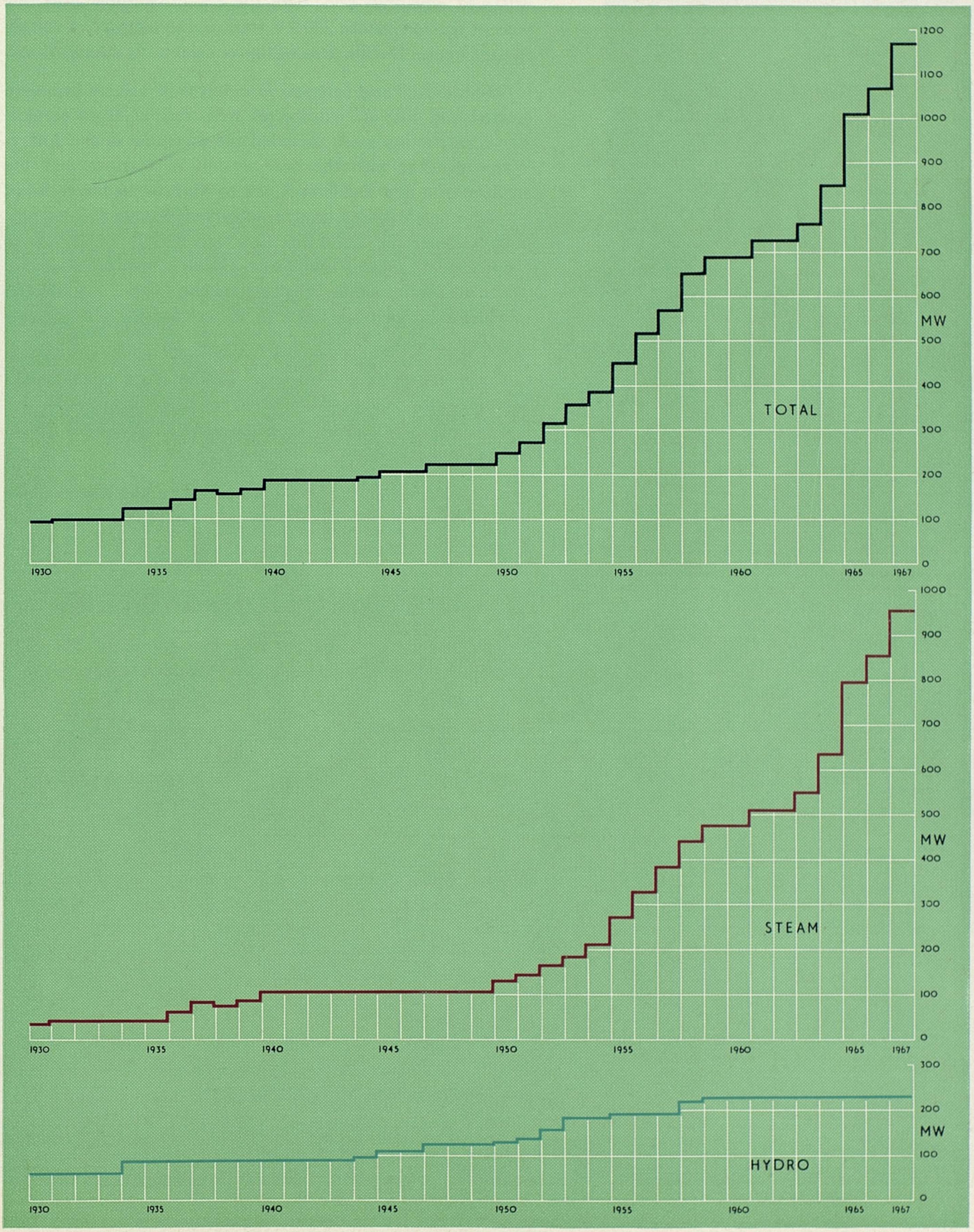
The more detailed investigations of scheme design for the pumped storage project based on Lough Nahanagan, Co. Wicklow, were completed early in the year. The Minister for Transport and Power has given his approval generally to the project.

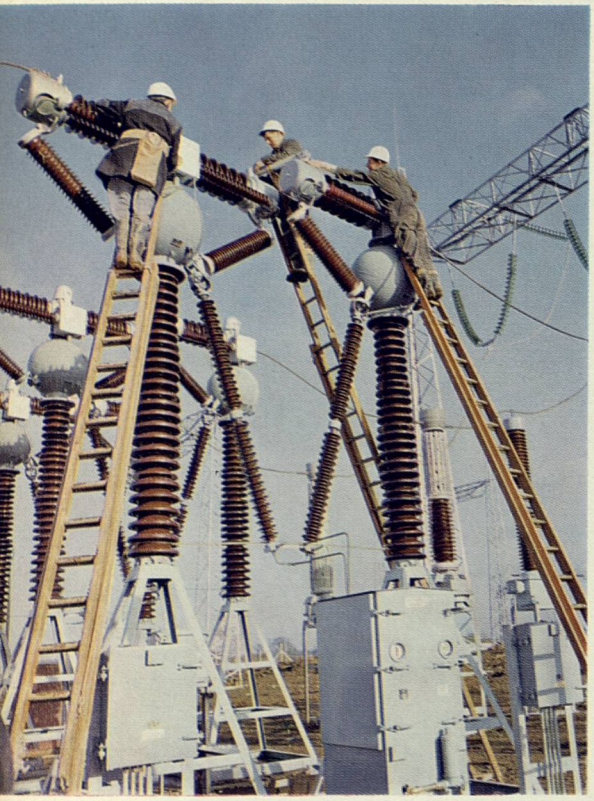
Tanker from Whitegate unloads oil at Ringsend



GENERATION CAPACITY

1930—1967





Erection of new 220 kV switchgear at Maynooth transformer station.

MAIN TRANSMISSION SYSTEM

Work on the second stage of the new 220 kV supergrid was well advanced and, with the commissioning later this year of the Maynooth 220 kV station, the security of supply to the Greater Dublin area will be considerably strengthened.

One hundred and forty-six kilometres of 110 kV line were erected and fifty-six kilometres were retired from service. The construction work included the diversion of the Liffey-Waterford line into the new station at Carlow, and the erection of a new line from Cork to Mallow on the route of an old 110 kV line retired from service last year. Two new lines connecting Lanesborough generating station with Carrick-on-Shannon and with Dublin respectively were placed in commission. Three conductors of the original six-conductor copper line from Ardnacrusha to Dublin were removed.

Three new 110 kV stations, Letterkenny, Carlow and Mallow, were constructed and put in service during the year and major plant additions or renewals were carried out in eight existing stations.

Research and development work carried out included the investigation of a suitable ground counterpoise for 220 kV lines.

DISTRIBUTION SYSTEM

The following extensions and alterations to the high tension and low tension networks were carried out:—

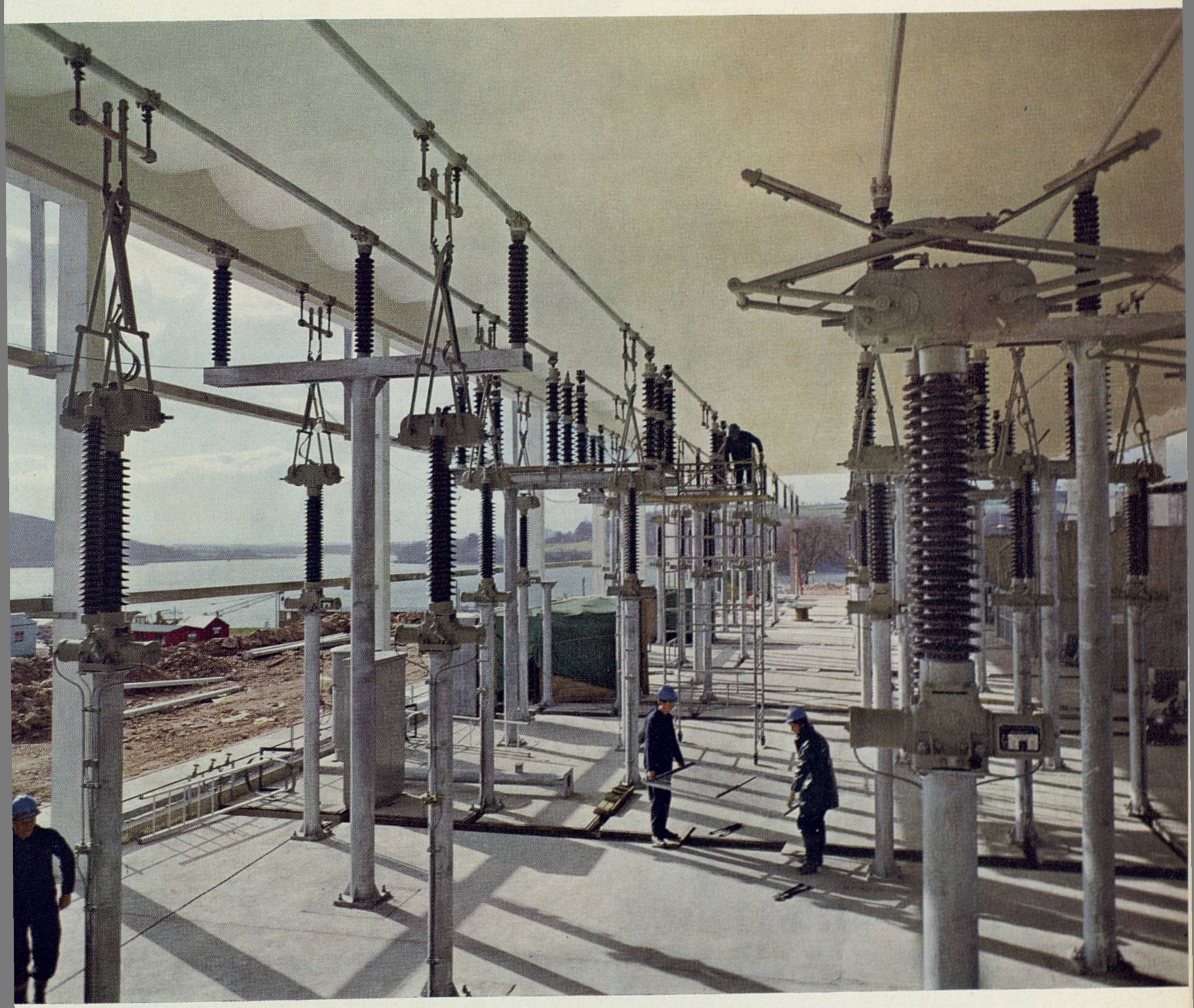
38 kV overhead lines	net increase	89·3 kms.
38 kV underground cables	net increase	4·7 kms.
10 kV overhead lines	net increase	51·6 kms.
10 kV underground cables	net increase	67·9 kms.
low tension overhead mains	net increase	48·8 kms.
low tension overhead mains	reconstructed or strengthened	27·7 kms.
low tension underground mains	net increase	53·8 kms.

Eleven 38 kV transformer stations were completed and put into commission. One 38 kV station was retired from service.

Two hundred and forty-one 10 kV and four 5 kV transformer stations were completed; thirteen 10 kV and one 5 kV stations were retired from service.

The operating voltage in seventeen transformer stations was increased from 5 kV to 10 kV.

Indoor 110 kV switching station, Great Island generating station, Co. Wexford.





Underfloor heating at Ballintubber Abbey.



Night storage heating in the home.

SALES OF APPLIANCES

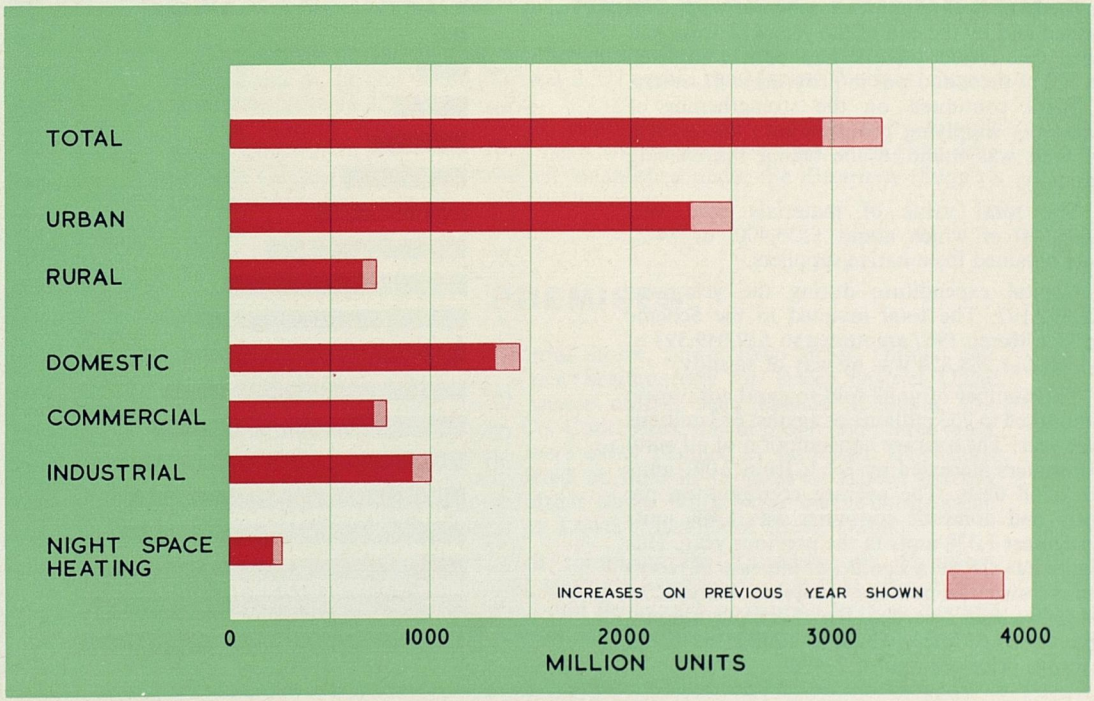
Sales of appliances on the Merchandise Trading Account amounted to £1,679, 155, excluding turnover tax, compared with £1,493,650 last year. The gross profit was £329,379 representing a rate of 19·6%. The Merchandise Trading Account, having been charged with overhead expenses and interest on working capital, showed a net profit of £15,446.

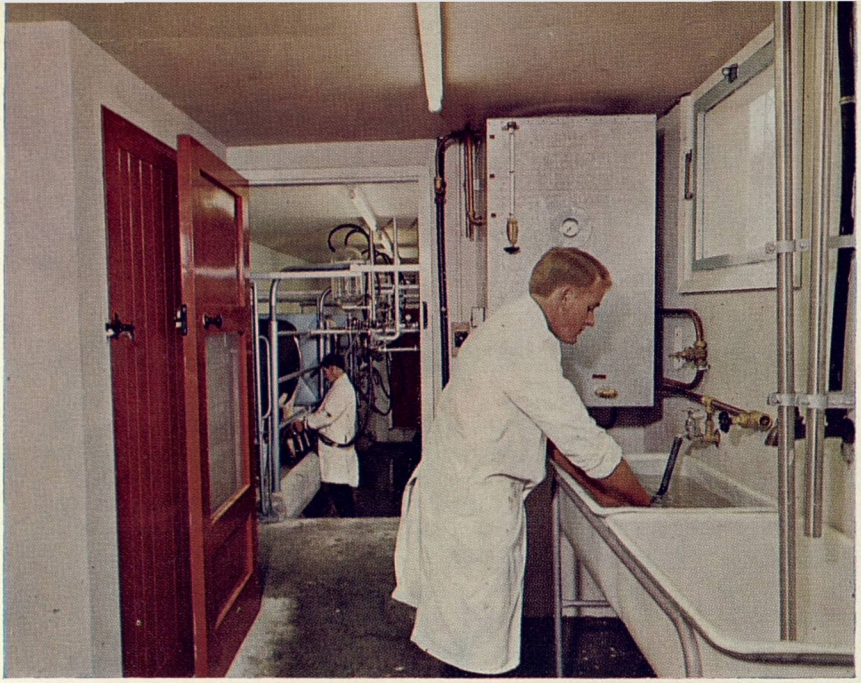
CONSUMERS' INSTALLATIONS

The value of installation contracts completed amounted to £635,673 compared with £739,714 for last year. The gross profit amounted to £133,644 representing a rate of 21·0%. The Installations Trading Account, having been charged with overhead expenses and interest on working capital, showed a net profit of £41,267.

ANALYSIS OF UNITS SOLD

The following diagram illustrates the analysis of units sold





Electric water heating on the farm an aid to quality milk production.

RURAL ELECTRIFICATION

During the year 4,742 new rural consumers were connected and the total number of consumers as a percentage of the premises in the 792 rural areas in the country rose to 84·6.

The recanvass of rural areas under the revised post-development scheme was continued and by the end of the year 412 areas had been recanvassed. Work had been completed in 320 of these and was in progress in 61 others.

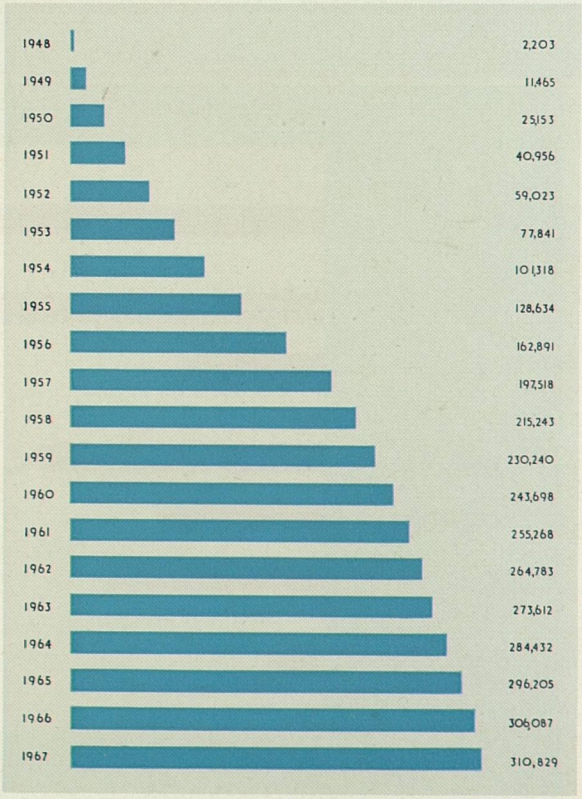
Work continued on the strengthening of networks supplying groups where the growth of load was found to be taxing the existing capacity.

The total value of materials used was £635,000 of which about £533,400, or 84%, was obtained from native suppliers.

Capital expenditure during the year was £1,392,197. The total invested in the Scheme at 31st March 1967 amounted to £39,049,393 of which £11,288,826 was by way of subsidy.

The number of units sold to rural consumers amounted to 733 millions, as against 663 millions last year. The average consumption of all rural consumers increased by 7·6% from 2,097 units to 2,268 units. The average consumption per farm and domestic consumer was 1,406 units as against 1,338 units in the previous year. This figure has shown a significant increase in recent years; over the past five years an increase of 44% has been recorded. Rural revenue amounted to £7,617,093, which is equivalent to an average price per unit of 2·49d.

The following diagram illustrates the cumulative total of consumers connected, under the Rural Electrification Scheme, as at 31st March each year from 1948 to 1967.



The Board again sponsored a number of educational courses, run by the Irish Countrywomen's Association at the Association's headquarters in Termonfeckin, Co. Louth. These included courses for farm housewives not on the official Bord Failte list, but who were commencing the business of taking in holiday guests; a young homemakers' course for girls between the ages of 16 and 25; and Macra na Tuaithe leadership courses. The Board also sponsored a home decoration competition organised by Macra na Tuaithe.

Meetings with the Chief Agricultural Officers and the advisory staff of the County Committees of Agriculture were held in ten counties. Their purpose was to discuss and demonstrate the applications of electricity in agriculture and to establish liaison between the agricultural advisory officers and the Board's staff.

The rural exhibit at the Royal Dublin Society's Spring Show included a modern dairying unit with cubicles, milking parlour and silo. The farm building was of a simple design produced by the Farm Buildings Department of the Agricultural Institute. The exhibit was well patronised. Other major shows at which the Board exhibited included Cork Summer Show, Limerick Show and Ennis Show. A display was also mounted for the Muintir na Tire Rural Week at Gormanston College, Co. Meath. The main theme at these shows was the role of electricity in clean milk production.

The film on clean milk production was shown on television, and was made available to interested groups throughout the country. A new film entitled 'Liquid Asset', dealing with water supply to a farm home, was produced during the year.

The continued growth in sales of underfloor heating for farrowing houses indicates the complete acceptance by progressive farmers of this method of providing heat for rearing bonhams.

The Board again records its gratitude for the help which it receives from various organisations in its efforts to promote the use of electricity among the rural community, and thus to improve living standards and to raise productivity in the rural areas.

SUPERANNUATION SCHEMES AND TRIBUNALS

The number of contributing members in the General Employees' Superannuation Scheme at the end of the year was 2,337 and in the Manual Workers' Superannuation Scheme 3,337.

The Manual Workers' Tribunal, established under the Electricity Supply Board (Superannuation) Act, 1942, dealt with twenty-one cases during the year and the General Employees' Tribunal, established under the Electricity (Supply) (Amendment) Act, 1949, dealt with twelve cases.

PREMISES

A three-storey extension to Central Stores, Lower Erne Street, Dublin, was under construction; plans for a new headquarters for Tralee District Office were under consideration. New service centres were opened at Boyle, Co. Roscommon and at Dunmanway, Co. Cork; work was in progress on three other new premises; a further fourteen were either planned or projected. Extensions or improvements had been completed or were in progress at sixteen existing premises and were planned for a further three. Work began on the construction of the new Head Office block at Lower Fitzwilliam Street, Dublin.

Twenty-three staff houses were completed for Lanesborough, Shannonbridge and Great Island generating stations; work was in progress on a further twenty-four houses for Great Island and Bellacorick generating stations; tenders were obtained for thirty-four houses for Tarbert generating station.



ACCOUNTS 1966-1967

Cash office, Cork showrooms.

Electricity Production Account for the Year ended 31st March, 1967

GENERATION	Fuel	Operating Expenses	Maintenance and Repair	Supervision and Local Administration	Works Cost	Per Unit Sent Out 1965/66		Depreciation and Renewals	Interest and Capital Repayments Allocation	Total	Per Unit Sent Out	1965/66 Total	1965/66 Per Unit Sent Out
	£	£	£	£	£	Pence	Pence	£	£	£	Pence	£	Pence
Coal/Oil													
North Wall	168,365	70,226	42,638	11,479	**292,708**	·750	·689	92,000	120,023	**504,731**	**1·293**	**506,251**	**1·192**
Marina	694,715	118,712	104,970	27,757	**946,154**	·403	·391	181,000	259,070	**1,386,224**	**·591**	**1,450,624**	**·563**
Ringsend	1,466,781	213,521	148,722	35,818	**1,864,842**	·390	·424	353,000	581,136	**2,798,978**	**·585**	**2,181,948**	**·694**
Arigna	223,014	43,559	28,597	7,615	**302,785**	1·002	·897	30,000	45,344	**378,129**	**1·252**	**368,832**	**1·131**
					3,406,489	·435	·452			**5,068,062**	**·648**	**4,507,655**	**·696**
Sod Peat (Machine)													
Portarlington	443,123	78,212	53,218	12,727	**587,280**	1·298	1·232	53,000	67,914	**708,194**	**1·565**	**700,545**	**1·490**
Allenwood	524,276	84,083	56,753	13,335	**678,447**	1·244	1·236	79,000	100,074	**857,521**	**1·572**	**860,538**	**1·565**
Lanesborough	215,154	46,128	16,536	5,706	**283,524**	1·106	1·054	32,000	50,681	**366,205**	**1·429**	**326,721**	**1·418**
					1,549,251	1·235	1·201			**1,931,920**	**1·540**	**1,887,804**	**1·510**
Milled Peat													
Ferbane	667,439	115,805	72,256	20,966	**876,466**	1·045	·985	181,000	282,403	**1,339,869**	**1·597**	**1,249,176**	**1·587**
Rhode	489,333	84,741	49,382	17,485	**640,941**	·947	·834	150,000	224,592	**1,015,533**	**1·501**	**1,034,585**	**1·322**
Bellacorick	231,386	73,772	38,070	12,121	**355,349**	1·139	1·565	81,000	125,628	**561,977**	**1·801**	**392,728**	**3·360**
Shannonbridge	284,440	58,116	30,269	11,323	**384,148**	·844	·690	89,000	133,365	**606,513**	**1·333**	**638,824**	**1·060**
Lanesborough	148,264	21,603	6,916	7,671	**184,454**	*	—	55,000	135,356	**374,810**	*	—	—
					2,441,358	·970	·885			**3,898,702**	**1·550**	**3,315,313**	**1·448**
Sod Peat (Hand-won)													
Four 5 MW Stations	128,815	52,609	28,077	6,886	**216,387**	1·909	1·918	44,000	70,702	**331,089**	**2·921**	**319,352**	**3·037**
Stand-by													
Pigeon House	28,259	67,649	34,498	12,812	**143,218**	—	—	67,000	78,159	**288,377**	—	**268,907**	—
TOTAL—FUEL STATIONS	5,713,364	1,128,736	710,902	203,701	**7,756,703**	·661	·668	1,487,000	2,274,447	**11,518,150**	**·981**	**10,299,031**	**1·014**
Hydro													
Shannon	—	69,611	89,331	25,125	**184,067**	·117	·103	49,000	228,917	**461,984**	**·293**	**457,695**	**·270**
Erne	—	34,834	52,283	19,821	**106,938**	·085	·073	83,000	332,534	**522,472**	**·416**	**519,873**	**·371**
Liffey	—	22,266	24,862	7,911	**55,039**	·201	·196	24,000	76,110	**155,149**	**·566**	**153,909**	**·560**
Lee	—	17,880	17,552	6,780	**42,212**	·120	·093	52,000	231,910	**326,122**	**·927**	**332,443**	**·762**
Clady	—	6,501	5,526	1,222	**13,249**	·229	·176	10,000	56,275	**79,524**	**1·373**	**78,836**	**1·187**
TOTAL—HYDRO STATIONS	—	151,092	189,554	60,859	**401,505**	·114	·099	218,000	925,746	**1,545,251**	**·440**	**1,542,756**	**·398**
TOTAL—ALL STATIONS	5,713,364	1,279,828	900,456	264,560	**8,158,208**	·535	·510	1,705,000	3,200,193	**13,063,401**	**·856**	**11,841,787**	**·844**
TRANSMISSION	—	61,331	211,455	109,538	**382,324**	—	—	525,000	844,888	**1,752,212**	—	**1,479,815**	—
	5,713,364	1,341,159	1,111,911	374,098	**8,540,532**	—	—	2,230,000	4,045,081				
Electricity purchased in bulk:										**11,635**	—	**15,938**	—
General Administration:							£						
Generation							696,931						
Transmission							243,312			**940,243**	—	**851,147**	—
Total Cost										**15,767,491**	**1·034**	**14,188,687**	**1·011**
Transferred to Revenue Accounts:							£						
Non-Rural							**11,779,679**					**10,606,672**	
Rural							**3,987,312**					**3,582,015**	
										15,767,491		**14,188,687**	

*Recently commissioned

See note on Account No. 11

Electricity (Non-Rural) Revenue Account for the Year ended 31st March, 1967

No. 2

	£	£	1965/66 £
Electricity Production Account		11,779,679	*10,606,672*
Distribution Charges:			
Operation and maintenance	1,537,395		
Reserve for depreciation and renewals	982,531		
Interest and capital repayments	1,531,413		
Supervision and local administration	999,796		
		5,051,135	*4,537,972*
General Administration:			
Salaries and wages	1,116,662		
Travelling expenses	60,366		
Stationery	31,288		
Telephones and postage	17,726		
Lighting and heating	17,610		
Rents and rates	28,322		
Insurance	110,302		
Professional fees	20,659		
Publicity	173,066		
Maintenance of office buildings and equipment	42,925		
Staff training	181,406		
Pensions	138,403		
General assets—interest and capital repayments	228,147		
General assets—depreciation	68,000		
Bad debts	23,155		
Sundry expenses	20,060		
	2,278,097		
Less apportionments charged to:			
Production Account	940,243		
Rural Revenue Account	479,980		
Capital Works and other accounts	197,277		
		660,597	*579,946*
Turnover Tax		260,681	*237,224*
Balance carried to Profit and Loss Account		1,321,070	*1,237,794*
See note on Account No. 11		£19,073,162	*£17,199,608*

	£	1965/66 £
Electricity Charges	18,896,324	*17,034,832*
Meter and Other Charges	176,838	*164,776*
	£19,073,162	*£17,199,608*

Electricity (Rural) Revenue Account for the Year ended 31st March, 1967

No. 3

	£	£	1965/66 £
Electricity Production Account		3,987,812	*3,582,015*
Distribution Charges:			
Operation and maintenance	997,692		
Reserve for depreciation and renewals	1,249,469		
Interest and capital repayments	1,526,402		
Supervision and local administration	688,023		
		4,461,586	*4,146,732*
General Administration		479,980	*409,622*
Turnover Tax		65,170	*55,645*
See note on Account No. 11		£8,994,548	*£8,194,014*

	£	1965/66 £
Electricity Charges	7,575,470	*6,839,957*
Meter and Other Charges	41,623	*37,856*
Balance carried to Profit and Loss Account	1,377,455	*1,316,201*
	£8,994,548	*£8,194,014*

Profit and Loss Account for the Year ended 31st March, 1967

No. 4

	£	£	1965/66 £		£	1965/66 £
Interest payable to the Minister for Finance	2,664,532			Interest and Capital Repayments:		
Interest on E.S.B. Stocks (*less* temporary investment earnings) and on funded loan	2,178,714			Production Account	4,045,081	*3,793,353*
Stock management and transfer charges	25,449			Non-Rural Revenue Account	1,531,413	*1,398,816*
Other interest	1,310,079			Rural Revenue Account	1,526,402	*1,504,155*
		6,178,774	*5,777,923*	Administration	228,147	*216,951*
Reserves:				Fisheries Account	6,127	*5,674*
Repayment of capital advances from the Minister for Finance	799,870			Installations Account	18,600	*17,100*
Repayment of funded loan	11,399			Merchandise Account	16,700	*18,600*
Sinking fund provision for redemption of E.S.B. Stocks	1,143,988			Capital Works	761,561	*576,365*
		1,955,257	*1,753,091*			
		£8,134,031	*£7,531,014*		£8,134,031	*£7,531,014*
Balance transferred from Rural Revenue Account		1,377,455	*1,316,201*	Balance transferred from Non-Rural Revenue Account	1,321,070	*1,237,794*
Balance carried to Net Revenue Account		252,880	*243,153*	Miscellaneous revenue	79,418	*83,429*
				Interest receivable	229,847	*238,131*
		£1,630,335	*£1,559,354*		£1,630,335	*£1,559,354*

Preservation and Operation of Fisheries for the Year ended 31st March, 1967

No. 5

	£	1965/66 £		£	1965/66 £
Preservation, operation and other direct costs	54,367	*51,974*	Sales of fish, letting of fishing rights and miscellaneous income	38,202	*49,003*
			Balance carried down	16,165	*2,971*
	£54,367	*£51,974*		£54,367	*£51,974*
Balance brought down	16,165	*2,971*	Balance carried down	37,430	*20,309*
Salaries and sundry expenses	9,770	*6,276*			
Fishery rates	3,823	*3,721*			
Reserve for depreciation and renewals	3,000	*3,000*			
General administrative expenses and interest	4,672	*4,341*			
	£37,430	*£20,309*		£37,430	*£20,309*
Balance brought down	37,430	*20,309*	Balance carried to Net Revenue Account	38,985	*21,742*
Capital repayments	1,555	*1,433*			
	£38,985	*£21,742*		£38,985	*£21,742*

Installations Trading Account for the Year ended 31st March, 1967

No. 6

		£	1965/66 £		£	1965/66 £
Cost value of work for which credit had not been taken at 31st March, 1966		197,375	250,648	Credit taken for contracts completed and charged	635,673	739,714
Cost of installation work carried out during the year		543,522	540,073	Cost value of work for which credit has not yet been taken	238,868	197,375
Gross profit carried down		133,644	146,368			
		£874,541	£937,089		£874,541	£937,089
	£					
Salaries, wages and commission	46,769			Gross profit brought down	133,644	146,368
Travelling expenses	4,917					
Sundry expenses	8,246					
General administrative expenses and interest, as apportioned	32,445					
		92,377	99,997			
Balance carried to Net Revenue Account		41,267	46,371			
		£133,644	£146,368		£133,644	£146,368

Merchandise Trading Account for the Year ended 31st March, 1967

No. 7

		£	1965/66 £		£	£	1965/66 £
Cost of goods sold		1,292,150	1,174,870	Sales	1,718,060		
Direct costs in connection with sales		57,626	49,659	*Less:* Turnover Tax	38,905		
Gross profit carried down		329,379	269,121			1,679,155	1,493,650
		£1,679,155	£1,493,650			£1,679,155	£1,493,650
	£						
Salaries, wages and commission	156,452			Gross profit brought down		329,379	269,121
Travelling expenses	17,201			Balance carried to Net Revenue Account		—	26,988
Publicity	25,848						
Rents, rates and maintenance of premises	24,353						
Sundry expenses	20,269						
General administrative expenses and interest, as apportioned	69,810						
		313,933	296,109				
Balance carried to Net Revenue Account		15,446	—				
		£329,379	£296,109			£329,379	£296,109

Net Revenue Account for the Year ended 31st March, 1967

	£	£		£	£
Fisheries deficit		38,985	Balance transferred from Profit and Loss Account		252,880
Balance carried down		270,608	Installations trading profit	41,267	
			Merchandise trading profit	15,446	
					56,713
		£309,593			£309,593
Transfer to reserve for renewals of credits (per contra) as additional provision for the renewal of plant		906,715	Balance brought down		270,608
E.S.B. Stock Issue expenses	£		Balance brought forward from last year's account		275,999
Flotation expenses	78,846				
Discount on issue	140,000		Credits arising consequent on the retirement of assets and the sale of scrapped material		906,715
		218,846			
Reserve for accident liability for staff not covered by the Social Welfare (Occupational Injuries) Act, 1966		24,048			
Contingencies reserve		250,000			
Balance carried forward		53,713			
		£1,453,322			£1,453,322

Statement of Repayable Capital and Redemption thereof to the 31st March, 1967

	Total Receipts to 31st March 1967	Redeemed			Balance Outstanding 31st March 1967
		Total to 31st March 1966	Redeemed during Year	Total to 31st March 1967	
	£	£	£	£	£
Minister for Finance:					
Advances under the Electricity (Supply) Acts and the Shannon Fisheries Act, 1935	**68,450,236**	9,201,109	799,870	10,000,979	**58,449,257**
Electricity Supply Board Stocks:					
5% redeemable 1966–1975	**10,000,000**	2,582,950	238,310	2,821,260	**7,178,740**
6% redeemable 1968–1978	**5,000,000**	618,333	85,200	703,533	**4,296,467**
6% redeemable 1982–1987	**12,000,000**	635,000	221,340	856,340	**11,143,660**
6% redeemable 1984–1989	**16,500,000**	601,140	419,730	1,020,870	**15,479,130**
7% redeemable 1986–1991	**6,000,000**	—	96,580	96,580	**5,903,420**
7% 'A' redeemable 1986–1991	**5,915,383***	—	—	—	**5,915,383**
Funded Loans and Loan Stocks:					
Local Authority Undertakings	**756,021**	756,021	—	756,021	—
New Ireland Assurance Co. Ltd.	**500,000**	39,418	11,399	50,817	**449,183**
	£125,121,640	£14,433,971	£1,872,429	£16,306,400	**£108,815,240**

*£7,000,000 Stock issued. Further calls due on 26th April and 24th May, 1967.

No. 10

Statement of Capital Reserves at 31st March, 1967

	£	£	*1965/66* £
Non-repayable contributions from Minister for Finance under Electricity (Supply) Acts towards capital cost of supplying rural areas	11,288,826		
Other non-repayable contributions for capital works	2,373,621		
		13,662,447	*12,574,684*
Repaid Capital, less intangible assets written off		**14,366,846**	*12,502,417*
Provision for depreciation, renewal and retirement of physical assets, together with proceeds of sale of assets, less physical assets retired		**54,748,998**	*49,667,578*
Total Capital Reserves		**£82,778,291**	*£74,744,679*

No. 11

Statement of Capital Investment in Fixed Assets at 31st March, 1967

	Total at 31st March, 1966, less retirements	Expenditure less retirements during year (a) and revision of classifications (b)	Total at 31st March, 1967, less retirements
	£	£	£
Generation	62,422,328	4,781,525 (a) (—) 224,815 (b)	**66,979,038**
Transmission	16,297,205	1,689,461 (a) 237,818 (b)	**18,224,484**
Distribution	68,236,846	4,860,373 (a) (—) 13,003 (b)	**73,084,216**
General	4,261,215	314,672	**4,575,887**
Fisheries	112,709	—	**112,709**
	151,330,303	£11,646,031	**162,976,334**
Capital Works in Progress, including payments on account to contractors and others	13,304,150		**12,867,915**
Total Capital Investment in Fixed Assets	£164,634,453		**£175,844,249**

Note:
The revision of classifications refers to the transfer of certain plant and equipment from Generation and Distribution to Transmission. The effect on capital charges is reflected in Accounts Nos. 1, 2 and 3.

Balance Sheet as at 31st March, 1967

Liabilities and Reserves		31/3/66
	£	£
Repayable Capital as per Statement No. 9	108,815,240	*104,522,476*
Capital Reserves as per Statement No. 10	82,778,291	*74,744,679*
	191,593,531	*179,267,155*
Loans under the Electricity Supply Board (Superannuation) Act, 1942	14,217	*115,142*
Short-Term Loan	2,144,235	*2,858,981*
Sundry Creditors	5,729,835	*5,871,647*
Electricity Supply Board Stock Sinking Funds (including interest due but unpaid)	920,392	*667,872*
Reserves:	£	
Contingencies	1,750,000	
Plant, Self-Insurance — special risks	500,000	
Others	99,604	
	2,349,604	*2,075,800*
Surplus: per Net Revenue Account	53,713	*275,999*
	£202,805,527	*£191,132,596*

Note:
At 31st March, 1967, contractual capital commitments amounted to approximately £13,000,000.

Signed: T. Murray, *Chairman*

J. G. Gargan, *Secretary*

Assets		31/3/66
	£	£
Fixed Assets as per Statement No. 11	175,844,249	*164,634,453*
Electricity Supply Board Stocks (nominal £2,335,929) at cost, held by the Munster and Leinster Bank Nominees Ltd., as depositaries of the Board	2,313,118	*2,662,255*
Sinking Fund Investments (nominal £914,003, market value £783,426) at cost	907,369	*662,369*
Stocks (at average cost), **Tools and Working Equipment** (at depreciated cost) on hand and in transit	7,057,194	*6,988,663*
Cost Value of Installation and Other Repayable Work in Progress	351,121	*284,924*
Sundry Debtors, after providing for bad and doubtful debts and including advances for goods not yet delivered	10,436,213	*8,938,369*
Temporary Cash Investment	5,500,000	*6,500,000*
Cash in Hand and with Banks	396,263	*461,563*
	£202,805,527	*£191,132,596*

Signed: L. J. Barry, *Chief Accountant*

AUDITORS' REPORT

As Auditors appointed by the Minister for Transport and Power, with the consent of the Minister for Finance, we have examined the foregoing Accounts and Balance Sheet which are in agreement with the books of account.

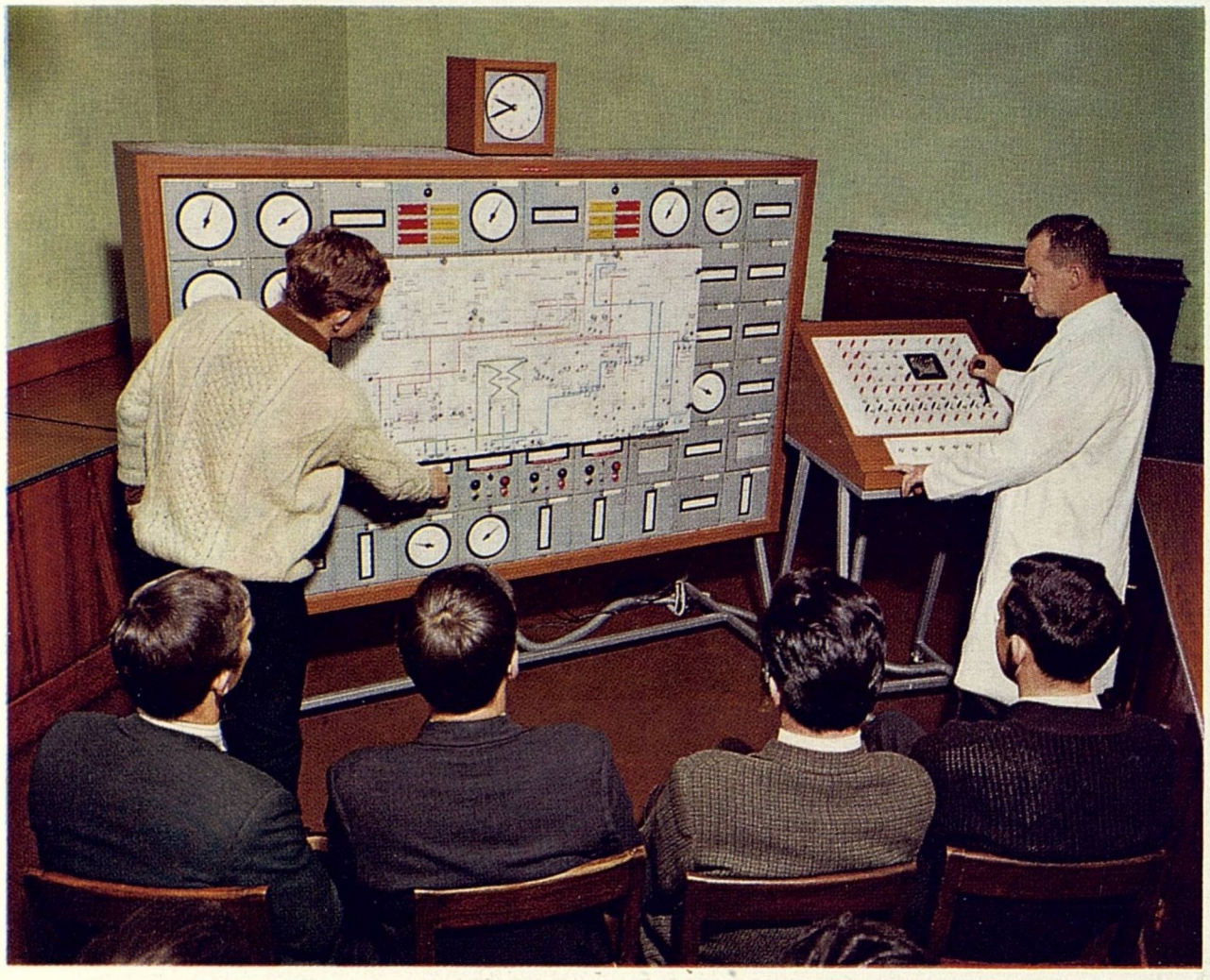
Allocations to the various Accounts, made by the Board's officials and approved by the Board, covering Overhead Expenses, Interest and Capital Repayments, and Costs of Generation, Transmission and Distribution have been made on the same basis as in the previous year. Additions have continued to be made to the Depreciation Reserve towards increased costs of renewals of physical assets, the original cost of which has already been fully provided.

In our opinion proper books of account have been kept and proper returns received from offices not visited by us. We have obtained all the information and explanations which we considered necessary for our audit.

In our opinion the foregoing Accounts and the Balance Sheet, give respectively a true and fair view of the outcome of the revenue operations of the Board for the year ended 31st March, 1967, and of the state of the Board's affairs as at that date.

KENNEDY, CROWLEY & CO.
CHARTERED ACCOUNTANTS.

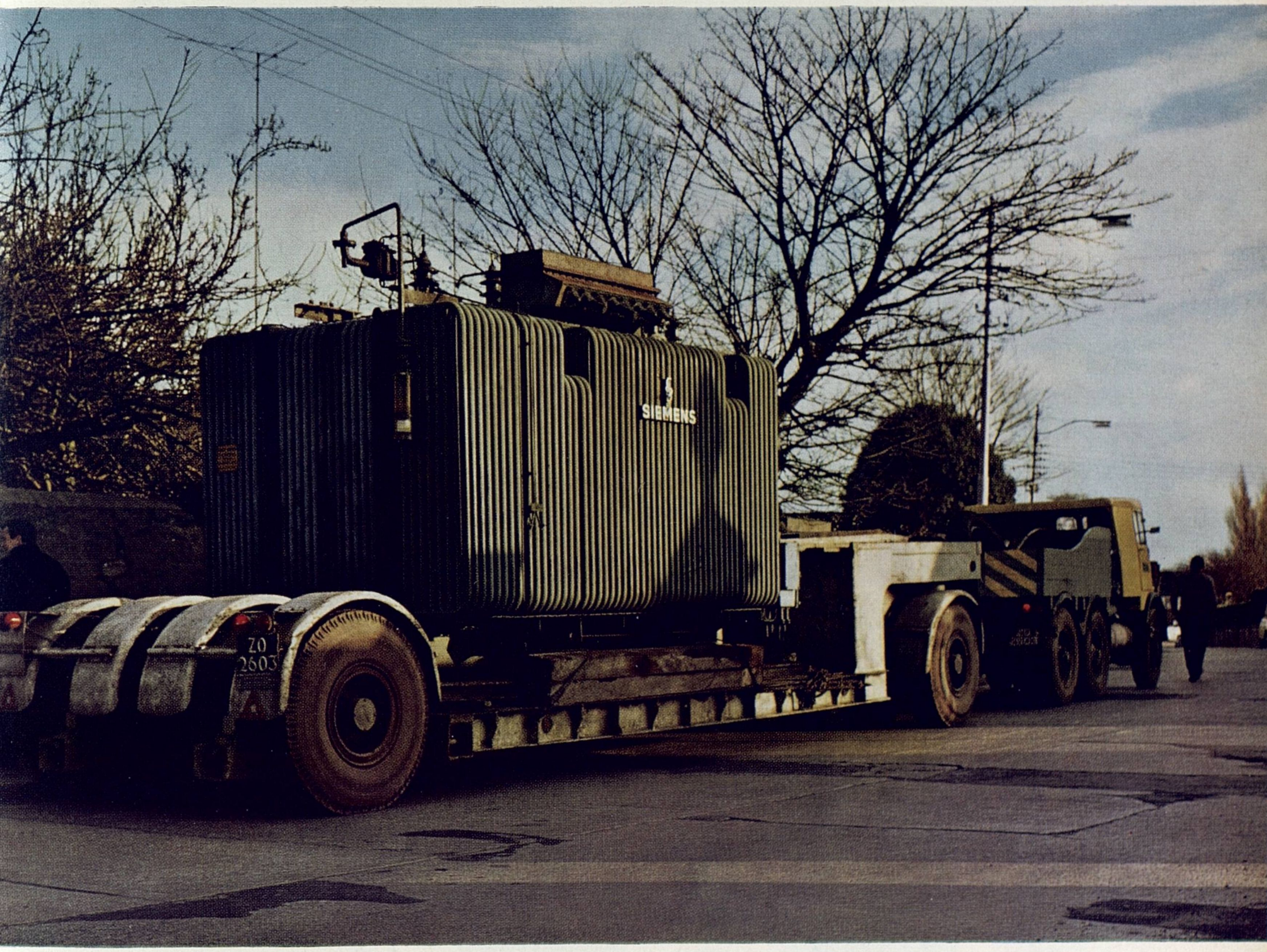
HAINAULT HOUSE,
69–71 ST. STEPHEN'S GREEN,
DUBLIN 2.
30TH JUNE, 1967



Generating plant operators being trained on special simulator designed by E.S.B. engineers.

Timberjack in action at an E.S.B. polefield.





38 kV transformer in transit on Board's own equipment.

APPENDICES

No.	
1	Number of consumers and other particulars relating to areas supplied by the Board
2	Growth of electricity sales and number of consumers
3	Analysis of units sold
4	Distribution at high tension of units generated
5	Generation load duration and integrated load duration curves
6	Generation statistics for the year
7	Particulars of generating plant
8	Performance of generating plant
9	Typical daily generation load curves
10	Transmission and distribution systems in commission at 31st March, 1967
11	Progress of the rural electrification scheme
12	Weekly generation (inside back cover)

NUMBER OF CONSUMERS AND OTHER PARTICULARS RELATING TO AREAS SUPPLIED BY THE BOARD

Appendix 1

Areas and Towns supplied	Approximate population	No. of consumers at 31st March		Motive power Units sold year ended 31st March	
	thousands	1967	1966	1967 millions	1966 millions
ATHLONE	**177·1**	**43,026**	**42,498**	**32·6**	**30·1**
Town	50·4	12,118	11,876	24·7	22·7
Rural	126·7	30,908	30,622	7·9	7·4
CORK	**302·1**	**81,885**	**80,802**	**155·0**	**141·9**
Town	167·8	48,927	48,091	136·7	125·5
Rural	134·3	32,958	32,711	18·3	16·4
DUBLIN No. 1	**485·7**	**135,381**	**135,705**	**189·1**	**169·4**
Town	485·7	135,381	135,705	189·1	169·4
DUBLIN No. 2	**306·0**	**95,747**	**92,584**	**155·0**	**160·2**
Town	229·3	77,369	74,555	128·9	138·3
Rural	76·7	18,378	18,029	26·1	21·9
DUNDALK	**227·0**	**56,570**	**55,684**	**122·2**	**115·7**
Town	75·2	20,873	20,366	93·2	90·8
Rural	151·8	35,697	35,318	29·1	24·9
GALWAY	**166·5**	**39,905**	**39,339**	**42·7**	**26·6**
Town	47·1	12,248	11,940	35·8	20·1
Rural	119·4	27,657	27,399	6·9	6·5
LIMERICK	**271·1**	**67,955**	**67,036**	**127·7**	**123·0**
Town	94·7	27,452	26,870	105·9	103·3
Rural	176·4	40,503	40,166	21·8	19·7
PORTLAOISE	**196·8**	**49,167**	**48,501**	**75·8**	**70·3**
Town	75·0	19,548	19,339	61·8	58·0
Rural	121·8	29,619	29,162	14·0	12·3
SLIGO	**252·0**	**65,839**	**64,645**	**22·6**	**18·8**
Town	46·3	12,814	12,749	10·7	9·2
Rural	205·7	53,025	51,896	11·9	9·6
TRALEE	**143·3**	**35,763**	**35,229**	**18·9**	**16·2**
Town	29·3	7,775	7,714	7·3	6·7
Rural	114·0	27,988	27,515	11·6	9·5
WATERFORD	**210·6**	**55,323**	**54,090**	**139·7**	**104·9**
Town	95·4	26,608	26,054	119·1	87·0
Rural	115·2	28,715	28,036	20·6	17·9
GROSS TOTALS	**2,738·2**	**726,561**	**716,113**	**1,081·3**	**977·1**
TOWN	1,396·2	401,113	395,259	913·2	831·0
RURAL	1,342·0	325,448	320,854	168·1	146·1

Appendix 2

GROWTH OF ELECTRICITY SALES AND NUMBER OF CONSUMERS

The following table shows, quinquennially from 1930 to 1955 and for each year since, the number of units generated and sold, the revenue, the average price per unit and the number of consumers.

Year ended 31st March	Units generated (and purchased) millions	Units sold millions	Revenue from sales of energy thousands	Average price in pence per unit sold	Total consumers
			£		
1930	60·9	43·2	478	2·66	48,606
1935	206·1	157·0	1,258	1·92	103,037
1940	407·0	318·6	1,946	1·47	172,545
1945	406·3	319·0	2,458	1·85	228,008
1950	784·8	626·2	4,774	1·83	310,639
1955	1,461·7	1,192·2	9,522	1·92	461,901
1956	1,573·1	1,306·6	10,465	1·92	509,546
1957	1,647·7	1,352·6	11,555	2·05	547,910
1958	1,774·8	1,424·6	12,903	2·17	570,345
1959	1,898·2	1,549·4	13,784	2·14	590,921
1960	2,096·0	1,692·2	14,724	2·09	610,946
1961	2,262·3	1,863·6	16,263	2·09	628,241
1962	2,453·0	2,005·1	17,731	2·12	642,753
1963	2,714·9	2,238·5	19,445	2·08	659,932
1964	2,900·8	2,375·9	20,383	2·06	678,054
1965	3,240·2	2,682·6	22,488	2·01	697,491
1966	3,546·2	2,953·3	24,077	1·96	716,113
1967	3,851·0	3,238·1	26,690	1·98	726,561

Appendix 3

ANALYSIS OF UNITS SOLD

Class of Supply	Year ended 31st March, 1967 (millions)	Year ended 31st March, 1966 (millions)	Increase (millions)	Percentage increase
DOMESTIC:				
General supply	1,351·5	1,247·9	103·6	8·3
Night space heating	100·3	77·3	23·0	29·8
	1,451·8	1,325·2	126·6	9·6
COMMERCIAL				
Lighting	134·1	125·2	8·9	7·1
Heating, cooking and water heating	240·3	223·8	16·5	7·4
Motive power	134·2	124·4	9·8	7·9
Night space heating	144·8	129·5	15·3	11·8
Public lighting	39·3	37·5	1·8	5·0
Miscellaneous	84·2	75·4	8·8	11·6
	776·9	715·8	61·1	8·5
INDUSTRIAL				
Maximum demand tariffs	840·5	749·2	91·3	12·2
Lighting	14·4	14·6	−0·2	−1·4
Heating, cooking and water heating	39·0	36·4	2·6	7·2
Motive power	106·2	103·1	3·1	3·0
Night space heating	9·3	9·0	0·3	3·1
	1,009·4	912·3	97·1	10·6
TOTAL	3,238·1	2,953·3	284·8	9·6

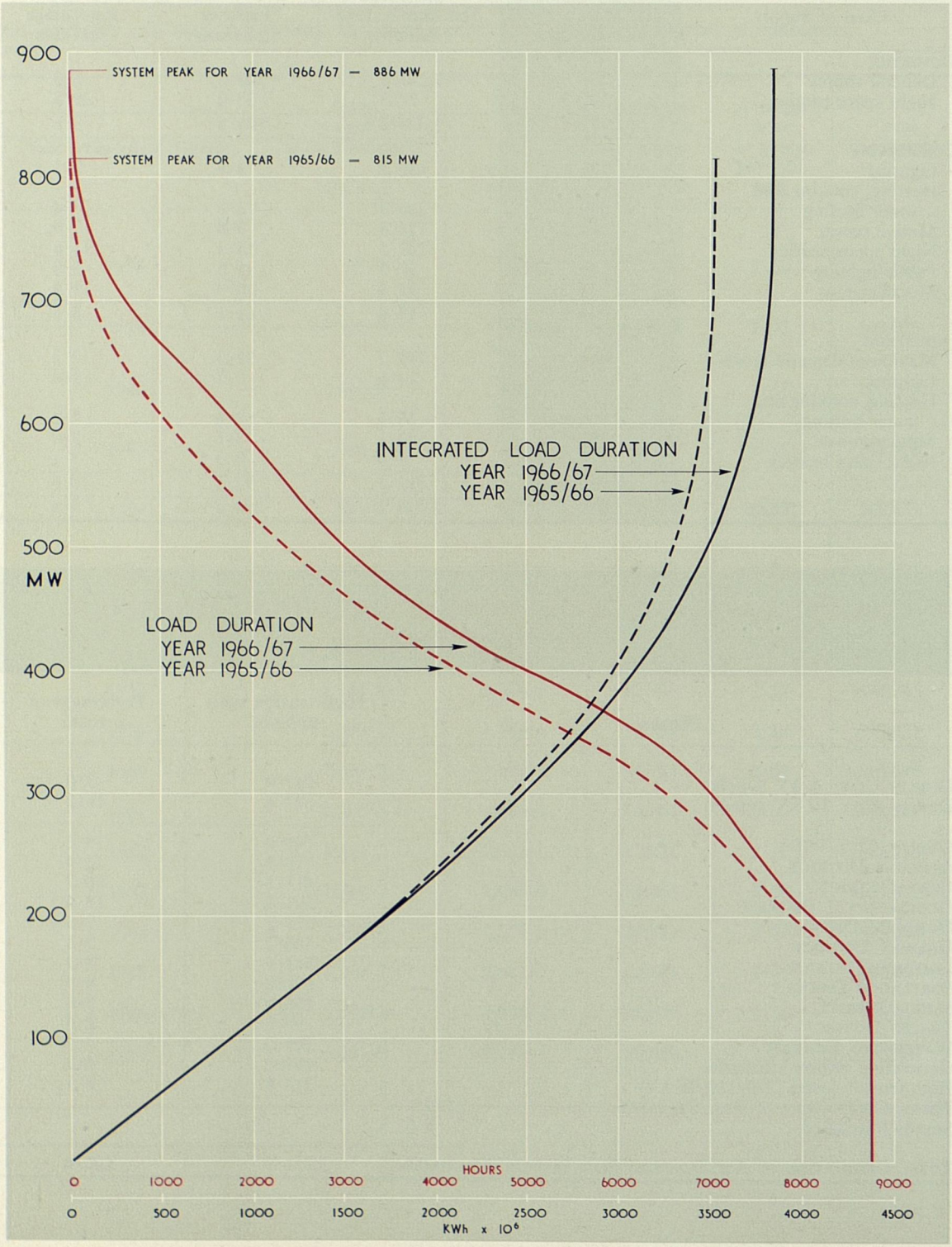
Appendix 4

DISTRIBUTION AT HIGH TENSION OF UNITS GENERATED FOR YEAR 1966/67

District		High tension units millions	Percentage of total
DUBLIN CITY 5 kV supply		117·0	3·0
DUBLIN CITY 10 kV supply		623·4	16·2
DUBLIN CITY TOTAL		740·4	19·2
ATHLONE DISTRICT		129·9	3·4
CORK DISTRICT		411·1	10·7
DUBLIN NO. 2 DISTRICT		591·9	15·4
DUNDALK DISTRICT		271·2	7·0
GALWAY DISTRICT		145·7	3·8
LIMERICK DISTRICT		322·6	8·4
PORTLAOISE DISTRICT		191·0	4·9
SLIGO DISTRICT		146·5	3·8
TRALEE DISTRICT		98·6	2·6
WATERFORD DISTRICT		304·0	7·9
Generating station auxiliaries		184·7	4·8
High tension losses (220/110/38 kV)		313·4	8·1
TOTAL GENERATION OF ALL STATIONS	3,845·4		
Supply Purchased	5·6		
TOTAL GENERATION OF ALL STATIONS PLUS SUPPLY PURCHASED		3,851·0	100·0

Appendix 5

GENERATION LOAD DURATION
AND INTEGRATED LOAD DURATION CURVES
Year ended 31st March, 1967



GENERATION STATISTICS FOR THE YEAR 1966/67

Appendix 6

Station	Year 1966/67			Year 1965/66
	Generated million units	Station use million units	Sent out million units	Sent out million units
ARDNACRUSHA	381·4	3·1	378·3	407·9
CLIFF	88·9	0·7	88·2	96·7
CATHALEEN'S FALL	215·0	2·1	212·9	240·2
CARRIGADROHID	22·6	0·3	22·3	28·6
INNISCARRA	62·8	0·7	62·1	76·1
POLLAPHUCA	33·5	0·8	32·7	33·6
GOLDEN FALLS	12·6	0·2	12·4	12·6
LEIXLIP	20·9	0·2	20·7	19·5
CLADY	14·0	0·1	13·9	15·9
FERBANE	220·8	19·5	201·3	188·9
RHODE	174·9	12·5	162·4	189·0
BELLACORICK	81·4	6·5	74·9	27·6
SHANNONBRIDGE	116·8	7·6	109·2	145·2
PORTARLINGTON	116·5	7·9	108·6	112·4
ALLENWOOD	140·1	9·2	130·9	132·0
LANESBOROUGH	125·0	7·5	117·5	55·3
CAHIRCIVEEN	4·9	0·6	4·3	4·2
MILTOWN-MALBAY	2·2	0·3	1·9	1·6
SCREEB	2·9	0·3	2·6	0·7
GWEEDORE	19·7	1·3	18·4	19·0
PIGEON HOUSE	10·6	3·4	7·2	8·3
NORTH WALL	102·6	8·9	93·7	101·9
RINGSEND	1,209·6	60·8	1,148·8	756·8
MARINA	588·5	25·5	563·0	619·1
ARIGNA	77·2	4·7	72·5	78·4
PURCHASED	5·6	—	5·6	8·5
TOTALS	3,851·0	184·7	3,666·3	3,380·0
Maximum daily generation, million units			15·4	14·7
Maximum load generated in kW			886,000	815,000

PARTICULARS OF GENERATING PLANT

Hydro Stations

Station	River	Catchment area sq. kms.	Average available head metres	Average annual generation million units	Generating sets		Type of turbine
					No.	Capacity each kW	
ARDNACRUSHA	Shannon	10,400	28·3	310	3 1	20,000 25,000 **85,000**	Francis Kaplan
POLLAPHUCA	Liffey	309	48·7	45	2	15,000 **30,000**	Kaplan
GOLDEN FALLS		312	16·6		1	**4,000**	Propeller
LEIXLIP		843	17·3		1	**4,000**	Kaplan
CLIFF	Erne	4,320	12·1	275	2	10,000 **20,000**	Kaplan
CATHALEEN'S FALL		4,350	29·7		2	22,500 **45,000**	
CARRIGADROHID	Lee	610	15·4	77	1	**8,000**	Kaplan
INNISCARRA		790	31·9		1 1	15,000 4,000 **19,000**	
CLADY	Clady	80	57·8	13	1	**4,000**	Francis

Steam Stations

Station	Location	Generating Sets					Boilers			
		No.	Capacity each kW	Pressure Psi	Temp. °F	Type of cooling	No.	Capacity each k.lb./hour	Type of firing	Fuel type
Pigeon House	Dublin City	1 4	10,000 20,000 **90,000**	250	750	Estuarine	10	100	Mech. Stoker and Oil-fired	Coal and Oil
North Wall	Dublin City	3	16,000 **48,000**	400	800	Estuarine	4 3	40 165	Oil-fired	Oil
Portarlington	Co. Laoise	3	12,500 **37,500**	400	800	Tower	3	150	Mech. Stoker	Sod Peat
Allenwood	Co. Kildare	2	20,000 **40,000**	400	800	Tower	4	150	Mech. Stoker	Sod Peat
Marina	Cork City	2 1	30,000 60,000 **120,000**	600 1,150	850 950	Tidal River	3 1	200 550	P.F. and Oil-fired Oil-fired	Coal or Oil Oil
Ringsend	Dublin City	3 3	30,000 60,000 **270,000**	600 1,150	850 950	Estuarine	4 3	200 550	P.F. and Oil-fired Oil-fired	Coal or Oil Oil

Steam Stations

Station	Location	Generating Sets					Boilers			
		No.	Capacity each kW	Pressure Psi	Temp. °F	Type of cooling	No.	Capacity each k.lb./hour	Type of firing	Fuel type
Ferbane	Co. Offaly	3 1	20,000 30,000 **90,000**	400 900	800 950	Tower	3 1	220 285	P.F.	Milled Peat
Miltown-Malbay	Co. Clare	1	**5,000**	400	800	Tower	1	60	Mech. Stoker	Sod Peat
Screeb	Co. Galway	1	**5,000**	400	800	Sea	1	60	Mech. Stoker	Sod Peat
Cahirciveen	Co. Kerry	1	**5,000**	400	800	Tower	1	60	Mech. Stoker	Sod Peat
Gweedore	Co. Donegal	1	**5,000**	400	800	River	1	60	Mech. Stoker	Sod Peat
Arigna	Co. Roscommon	1	**15,000**	400	800	Lake	1	165	P.F.	Coal
Lanesborough	Co. Longford	1 1	20,000 40,000 **60,000**	400 900	800 950	River	1 1	220 380	Mech. Stoker P.F.	Sod Peat Milled Peat
Rhode	Co. Offaly	2 1	20,000 40,000 **80,000**	650 900	850 950	Tower	2 1	210 380	P.F.	Milled Peat
Bellacorick	Co. Mayo	2	20,000 **40,000**	650	850	Tower	2	210	P.F.	Milled Peat
Shannonbridge	Co. Offaly	1	**40,000**	900	950	River	1	380	P.F.	Milled Peat
Great Island (under construction)	Co. Wexford	2	60,000 **120,000**	1,150	950	Estuarine	2	520	Oil-fired	Oil
Tarbert (under construction)	Co. Kerry	2	60,000 **120,000**	1,150	950	Estuarine	2	520	Oil-fired	Oil
Pigeon House "B" (under construction)	Dublin City	2	120,000 **240,000**	1,800	995/995	Estuarine	2	835	Oil-fired	Oil

PERFORMANCE OF GENERATING PLANT

Year ended 31st March, 1967

Hydro-electric Stations

Station	River	Rainfall at station	Total inflow*	Discharge through sets	Water utilisation	Average available head	Water per unit generated	Installed capacity	Units sent out	Plant load factor	Total cost per unit sent out
		inches	m^3/sec	m^3/sec	%	metres	m^3	kW	millions	%	pence
ARDNACRUSHA	Shannon	43·6	199·2	188·4	99·5	28·2	15·5	85,000	378·3	51·4	0·293
POLLAPHUCA		43·1	11·5	10·7	100·0	48·8	10·1	30,000	32·7	12·8	
GOLDEN FALLS	Liffey	43·1	11·5	11·2	100·0	16·6	28·0	4,000	12·4	36·1	0·566
LEIXLIP		37·5	18·6	17·3	96·7	17·3	26·1	4,000	20·7	59·8	
CLIFF	Erne	46·7	106·5	100·1	99·7	12·2	35·3	20,000	88·2	50·9	0·416
CATHALEEN'S FALL				102·6	96·7	29·6	15·0	45,000	212·9	54·7	
CARRIGADROHID	Lee	48·5	21·3	20·8	99·4	13·9	29·5	8,000	22·3	32·3	0·927
INNISCARRA		45·3	26·5	26·0	99·4	33·3	13·0	19,000	62·1	37·8	
CLADY	Clady	64·6	3·9	3·4	98·5	—	7·6	4,000	13·9	40·1	1·373

The percentage utilisation of the total discharge is exclusive of river compensation water and, in the case of the River Liffey, of the draw-off for the Dublin City water supply from Pollaphuca Reservoir which averaged 19·5 million gallons per day (1·0 m^3/sec) and of the permanent water supply from Leixlip Reservoir to the Dublin County Council which started on the 10th December, 1966. This draw-off amounted to 2·2 million gallons per day (0·12 m^3/sec).

Shannon and Erne rainfall represent average of catchment area.

* *Based on discharge through sets*

PERFORMANCE OF GENERATING PLANT

Year ended 31st March, 1967

Steam Stations

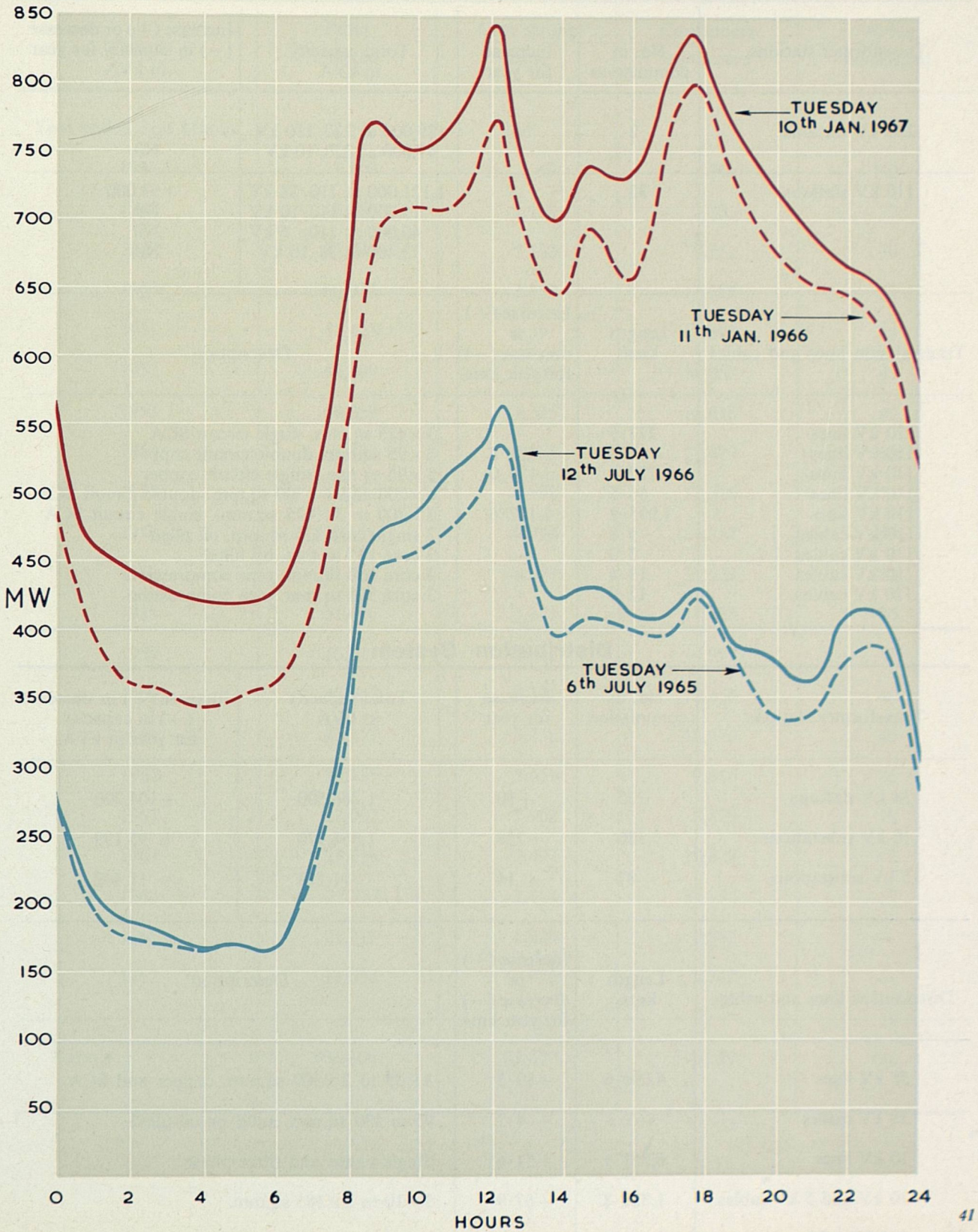
Station	Location	Installed capacity kW	Units sent out millions	Plant load factor %	Fuel type	Total fuel used tons	Total fuel cost £	Fuel cost per unit sent out pence	Total cost per unit sent out pence
PIGEON HOUSE (Stand-by Station)	Dublin City	90,000	7·2	—	Coal Oil	1,700 5,800	—	—	—
NORTH WALL	Dublin City	48,000	93·7	22·4	Oil	36,400	168,365	0·431	1·293
PORTARLINGTON	Co. Laoise	37,500	108·6	35·6	Sod Peat	132,500	443,123	0·979	1·565
ALLENWOOD	Co. Kildare	40,000	130·9	40·1	Sod Peat	156,500	524,276	0·961	1·572
MARINA	Cork City	120,000	563·0	56·1	Coal Oil	— 153,900	694,715	0·296	0·591
RINGSEND	Dublin City	270,000	1,148·8	58·0	Coal Oil	22,900 306,600	1,466,781	0·306	0·585
FERBANE	Co. Offaly	90,000	201·3	28·1	Milled Peat Oil	398,300 5,300	667,439	0·796	1·597
FOUR 5 MW STATIONS	West Coast	20,000	27·2	17·0	Sod Peat	37,000	128,815	1·137	2·921
LANESBOROUGH	Co. Longford	20,000 40,000	61·5 56·0	37·1 35·8	Sod Peat Milled Peat Oil	63,100 85,400 1,800	215,154 —	0·840 —	1·429 —*
ARIGNA	Co. Roscommon	15,000	72·5	58·9	Coal Oil	45,900 400	223,014	0·738	1·252
RHODE	Co. Offaly	80,000	162·4	25·0	Milled Peat Oil	278,000 6,900	489,333	0·723	1·501
BELLACORICK	Co. Mayo	40,000	74·9	23·3	Milled Peat Oil	144,000 1,500	231,386	0·741	1·801
SHANNONBRIDGE	Co. Offaly	40,000	109·2	33·4	Milled Peat Oil	173,700 1,300	284,440	0·625	1·333

Milled and sod peat tons are for equivalent standard fuel of 55% and 30% moisture content respectively.

* *Recently commissioned*

TYPICAL DAILY GENERATION LOAD CURVES

Appendix 9



Appendix 10

TRANSMISSION AND DISTRIBUTION SYSTEMS IN COMMISSION

At 31st March, 1967

Transmission System

Transformer stations	No. in commission	Increase for year	Total capacity in kVA	Increase (+) or decrease (−) in capacity for year in kVA
220 kV stations	2	Nil	189,000 at 220/110 kV 47,000 at 220/10 kV	Nil
110 kV stations	32	3	1,121,000 at 110/38 kV 15,000 at 110/10 kV 40,000 at 110/ 6 kV 73,400 at 38/10 kV	+93,000 Nil Nil Nil

Transmission lines and cables	Length kms.	Increase (+) or decrease (−) for year kms.	Description
220 kV lines	277·5	—	3×425 sq.mm. single circuit SCA
110 kV lines	7·4	−181·8	6×95 sq.mm. double circuit copper
110 kV lines	777·5	+139·0	3×95 sq.mm. single circuit copper
110 kV lines	66·5	—	6×200 and 6×300 sq.mm. double circuit SCA
110 kV lines	1,995·9	+132·6	3×200 to 3×425 sq.mm.. single circuit SCA
110 kV cables	9·8	—	3 single core 325 sq.mm. oil filled
110 kV cables	3·0	—	3 core 185 sq.mm. oil filled
110 kV cables	13·4	—	3 core 300 sq.mm. pipe compression
110 kV cables	12·0	—	3 core 500 sq.mm. pipe compression

Distribution System

Transformer stations	No. in commission	Increase for year	Total capacity in kVA	Increase (+) or decrease (−) in capacity for year in kVA
38 kV stations	235	+10	1,268,500	+104,700
10 kV substations	5,386	+228	1,054,770	+ 93,199
5 kV substations	87	− 14	71,113	− 11,440

Distribution lines and cables	Length kms.	Increase (+) or decrease (−) for year kms.	Description
38 kV lines	4,096·6	+89·3	3×35 to 3×300 sq.mm. copper and SCA
38 kV cables	167·3	+ 4·7	95 to 500 sq.mm. solid or oil-filled
10 kV lines	5,851·1	+51·6	Single-phase and three-phase
10 kV and 5 kV cables	1,329·8	+67·9	3×10 to 3×185 sq.mm.
3·3 kV cables	3·7	—	3×185 sq.mm.

PROGRESS OF THE RURAL ELECTRIFICATION SCHEME

Appendix 11

Period	Poles erected	Line strung kms.	Consumers connected	Areas completed
Year ended 31st March				
1947	1,300	63	Nil	Nil
1948	15,986	1,160	2,203	7
1949	32,002	2,783	9,262	30
1950	40,972	3,352	13,688	45
1951	42,423	3,591	15,803	49
1952	46,008	3,967	18,067	49
1953	48,059	4,345	18,818	49
1954	68,382	6,065	23,477	60
1955	91,391	7,998	27,316	75
1956	112,616	9,994	34,257	99
1957	91,794	8,277	34,627	80
1958	61,696	5,371	17,725	60
1959	50,113	4,345	14,997	45
1960	47,982	4,171	13,458	40
1961	43,757	3,738	11,570	40
1962	30,155	2,651	9,515	26
1963	22,062	1,962	8,829	19
1964	29,616	2,497	10,820	12
1965	27,737	2,414	11,773	7
1966	21,219	1,820	9,882	—
1967	11,034	915	4,742	—
TOTALS	936,304	81,479	310,829	792

TO THE MINISTER FOR AGRICULTURE AND FISHERIES

REPORT ON FISHERIES

In accordance with the provisions of Section 10 of the Electricity (Supply) (Amendment) Act, 1961, the Board presents the Annual Report on its fisheries and the Preservation and Operation of Fisheries Account (No. 5) for the year ended 31st March, 1967.

Development

On the Liffey and the Lee the prospects for a speedy rehabilitation of the fisheries diminished because of the salmon disease. Restocking in these rivers is continuing. The Board decided not to fish commercially on the River Clady in the interests of the stock and large numbers of salmon entered the spawning streams. On the Erne the largest run of salmon (10,936) through the fish pass at Cathaleen's Fall was recorded since counting commenced in 1953.

Hatcheries and Rearing Stations

The Board's hatcheries and rearing stations were fully utilised during the year. Hatchery production figures were:

Hatchery	Salmon ova	Losses during incubation
Shannon (Parteen)	1,957,000	2.6%
Lee (Carrigadrohid)	473,000	2.0%
Erne (Cliff)	801,000	1.1%

The Shannon figures include 390,000 ova purchased by the Board from Scotland and Wales and 150,000 supplied by the Department of Agriculture and Fisheries from Glenties Hatchery, Co. Donegal. The Lee figures include 350,000 ova also supplied by the Department of Agriculture and Fisheries. Ova supplied by Fisheries Division was, at its request, planted in the Bandon and Ilen Rivers which had been affected by the salmon disease.

At Parteen 196,000 smolts were reared and released in the Shannon system. Experimental rearing was also carried out successfully in the Erne hatchery.

Substantial technical information on the biology of salmon is being studied as a result of the hatchery work.

Commercial Fishing

Salmon: The reduced run of salmon in the Shannon is reflected in a decrease in revenue. Sales of salmon produced over £20,000.

The French Government temporarily prohibited salmon imports from Ireland because of the salmon disease. This prohibition has now been removed following representations by Fisheries Division.

Eels: The catch of eels continued at the same high level of the previous year. Revenue, amounting to £16,475, reflected a decrease in export prices.

The Board has been considering the further development of its eel fisheries on the Shannon. During the year 10 million elvers were transferred to Lough Derg and an experimental eel trapping device was introduced in the Ardnacrusha headrace. An examination of the potential eel productive capacity of the Shannon lakes was carried out and proposals for a comprehensive development programme are being formulated.

Salmon Disease

The Board's work for the rehabilitation of the fisheries on the rivers developed for hydro-electric power suffered a serious setback in spring 1966, as a result of the extension of the salmon disease, ulcerative dermal necrosis, into the Shannon, the Lee and the Liffey.The progress of the disease was similar to the pattern experienced elsewhere. Patches appeared on the salmon when they reached the lower freshwater areas and these spread rapidly

as the fish moved upstream, the spring fish being particularly affected. Although the disease abated somewhat during the grilse run in the summer, the position deteriorated again when temperatures fell and spawning in all the tributaries was seriously reduced.

It is impossible to assess accurately the number of salmon affected as high water and flood conditions made removal of the diseased fish very difficult. The staff of the Board and the local fishery boards removed 1,731 fish from the Shannon, 1,201 from the Lee and 714 from the Liffey. The disease did not spread seriously into the very valuable salmon and brown trout fisheries being developed in the midlands.

Research directed at identifying the causative organism is being carried out under the auspices of the Veterinary Research Laboratory, Abbotstown, of the Department of Agriculture and Fisheries. Tanks and other equipment from the Board's hatchery at Parteen were made available to the Laboratory and the Board has also made a contribution towards the cost of a complementary research study in University College, Dublin, and for the provision of a mobile laboratory for use by the staff of the Veterinary Research Laboratory. The Board is represented on the co-ordinating and the scientific committees, appointed by the Minister in connection with the disease.

All suspected fish were checked at the fish passes at Parteen and Ardnacrusha. Fortunately the disease appeared to have little effect on the stocks of juvenile salmon and the run of smolts in all the rivers in spring, 1967, was a record. The run of spring salmon in 1967 was, however, again affected by disease.

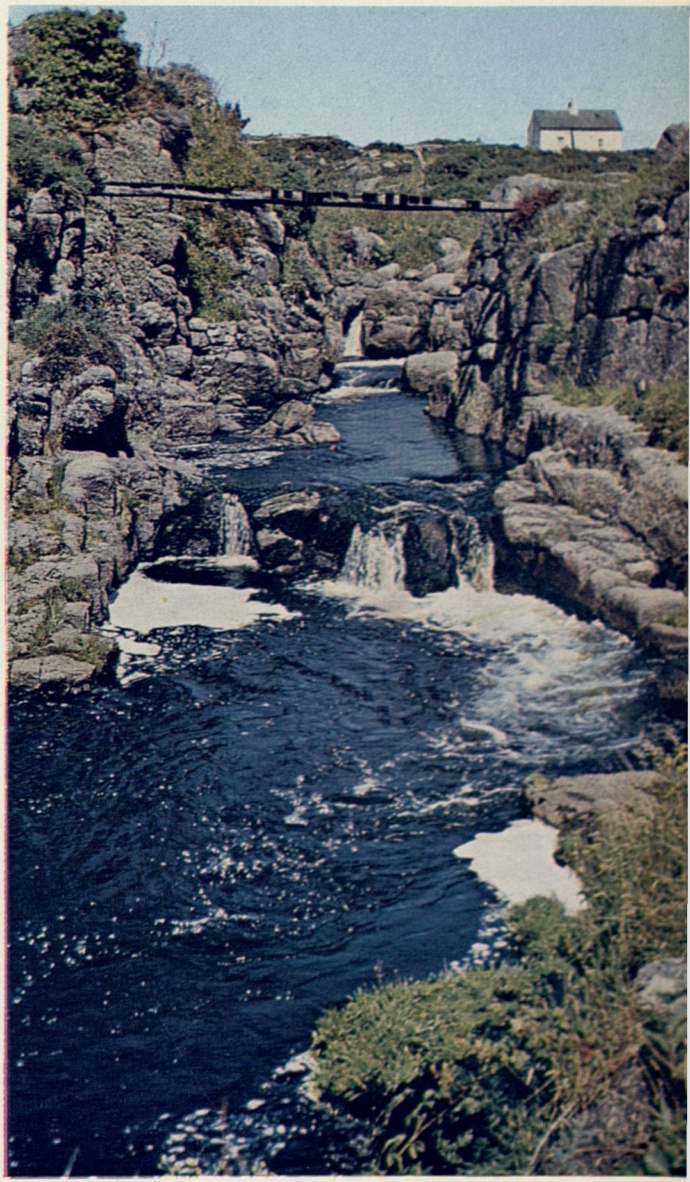
Substantial quantities of ova have been purchased and full use is being made of the Board's hatcheries to compensate for the spawning losses.

Conservation and Angling

Salmon angling was overshadowed by the presence of the disease and the Mulcair and Castleconnell fisheries suffered serious losses.

Since 1951, the Inland Fisheries Trust Incorporated has been developing brown trout and coarse angling over a large area of the Shannon catchment, under an agency agreement from the Board. To facilitate these developments further and to give the Trust more security of tenure, proposals for a lease of these waters were agreed. The lease reserves to the Board all necessary rights for the development of the salmon and eel fisheries in these areas and safeguards the Board's position in regard to the use of the waters for power purposes.

Salmon pool on River Clady below the Board's diversion weir at Gweedore



Counting of Salmon

The numbers of salmon counted in each of the last two years were as follows:—

	1966	1965
River Shannon		
Thomond weir, Limerick	9,885	19,704
Ardnacrusha fish pass	4,925	7,178
Parteen fish pass	698	1,551
River Lee		
Inniscarra fish pass	289	914
Carrigadrohid fish pass	114	534
River Erne		
Cathaleen's Fall fish pass	10,936	9,885
River Clady		
Gweedore weir	758	340
River Liffey		
Leixlip weir	655	3,152

Financial

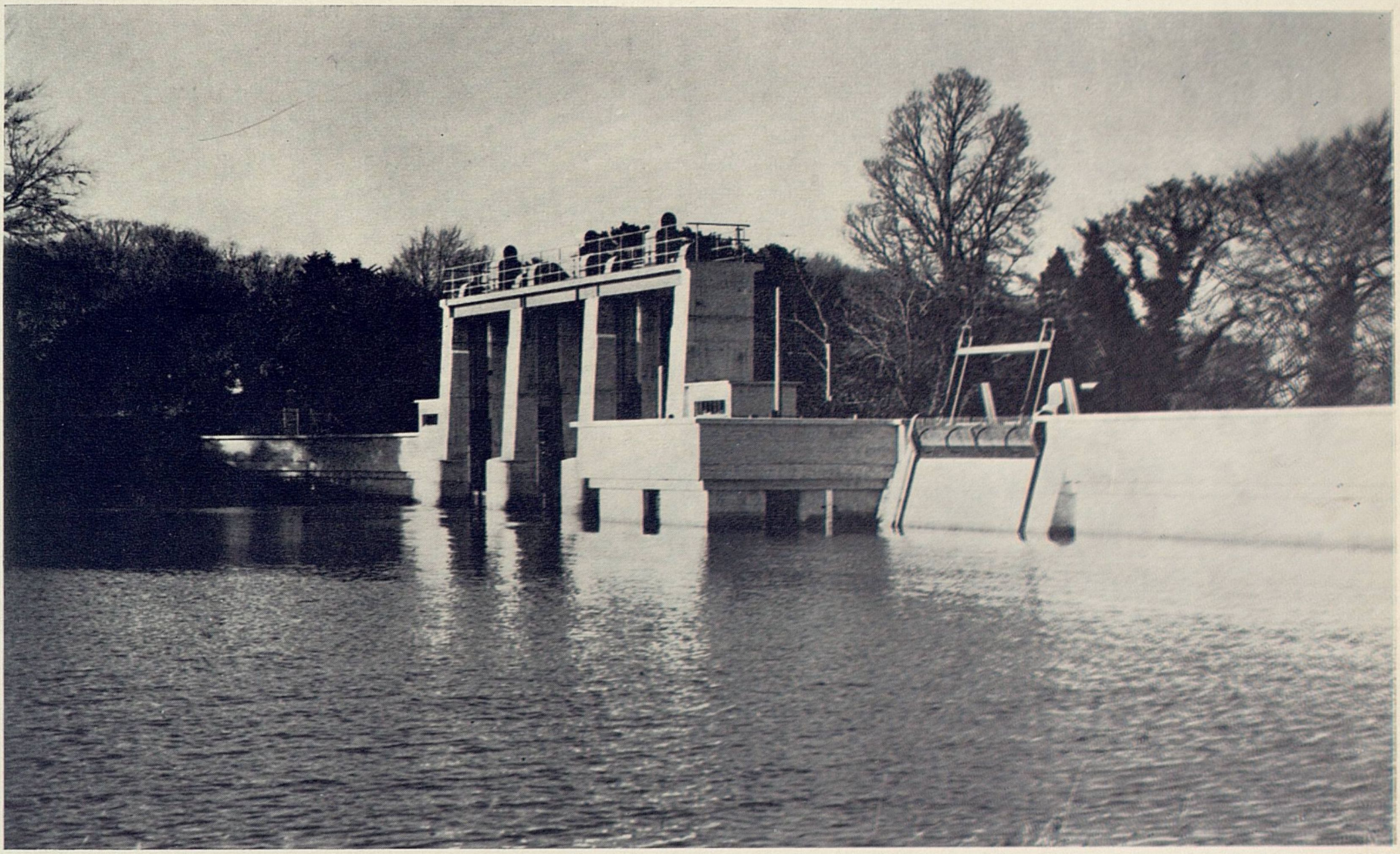
The financial aspects of the fisheries activities on the five river systems directly affected by hydro-electric development are shown in Account No. 5.

Revenue at £38,202 showed a decrease of £10,801 on last year, largely due to reduced salmon sales. Preservation and development of fisheries involved a total expenditure of £77,187.

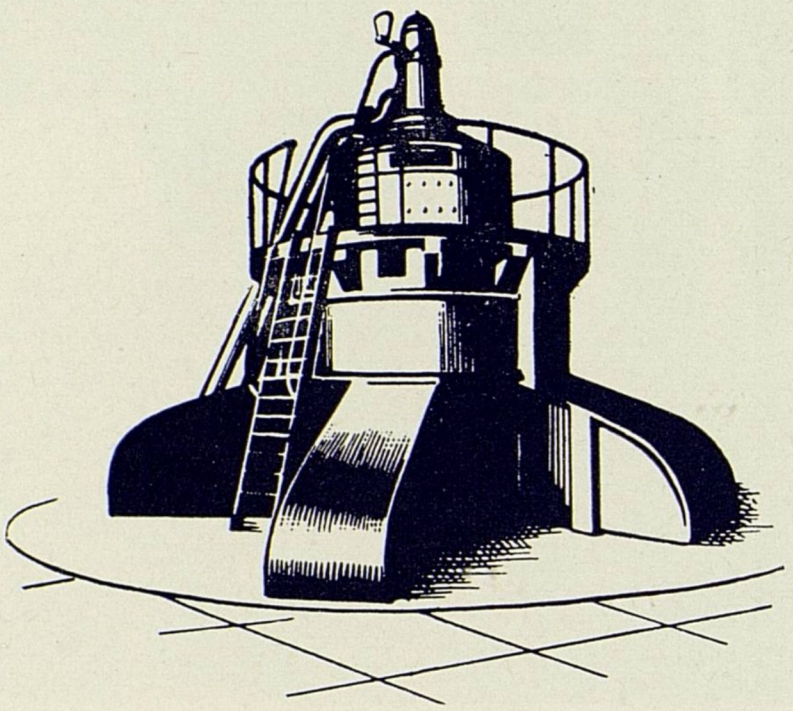
The Board gratefully acknowledges the assistance and help received from the officers of Fisheries Division, from the Ministry of Agriculture for Northern Ireland, the Inland Fisheries Trust Incorporated, the Boards of Conservators and local angling clubs.

(Signed) *T. Murray*, CHAIRMAN
Henry Kennedy
C. Gordon Lambert
T. MacMahon
Breandán ÓCearbhaill
J. A. Ryan
J. C. Tonge

(Signed) *J. G. Gargan*, SECRETARY
27th June, 1967



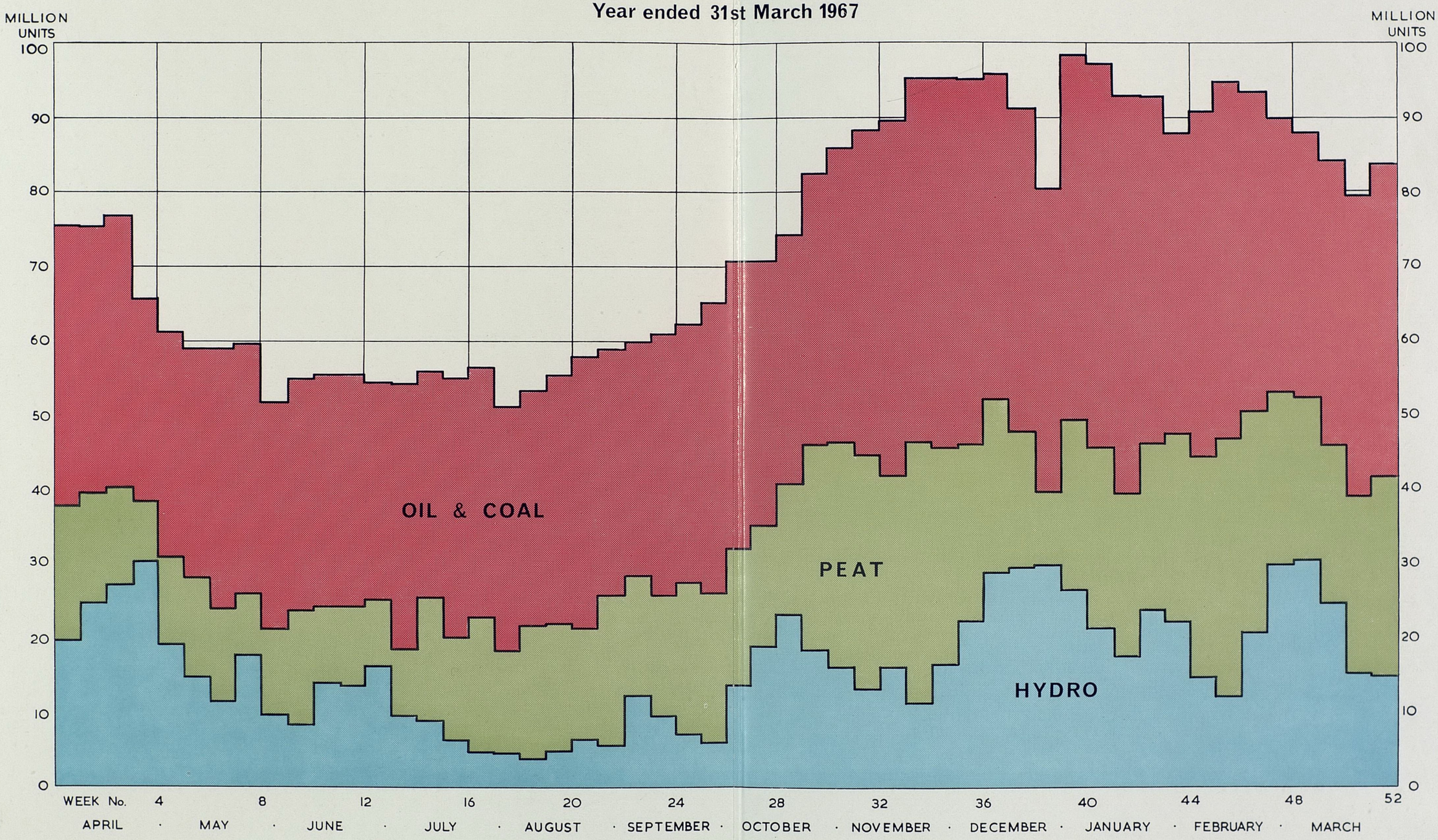
Leixlip dam showing entrance gates to top pool of fish pass.



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WEEKLY GENERATION

Year ended 31st March 1967



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and

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