

ESB

Forty ninth Annual Report For year ended 31st March 1976

ELECTRICITY SUPPLY BOARD
IRELAND

ELECTRICITY SUPPLY BOARD

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Telephone: Dublin 765831

Board Members

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C. KELLEHER

C. GORDON LAMBERT, B.A., B.Comm., F.C.A.

J. A. RYAN, M.A., LL.D.

S. SCALLY, B.Sc. (Econ.)

BARBARA SWEETMAN FITZGERALD

Chief Executive

J. J. KELLY, M.E., C.Eng., F.I.E.I., F.I.Mech.E.

Assistant Chief Executive

P. J. MORIARTY, F.C.I.S.

Directors

Finance **J. B. O'DONOGHUE,** F.C.C.A., A.C.M.A.

Personnel **P. J. MORIARTY,** F.C.I.S.

Commercial **M. J. SHIEL,** B.E., B.Sc., C.Eng., F.I.E.E., M.I.E.I.

Generation-Transmission **S. TINNEY,** B.E., B.Sc., M.I.E.E.

Secretary

J. F. WILLIAMS, F.C.I.S.

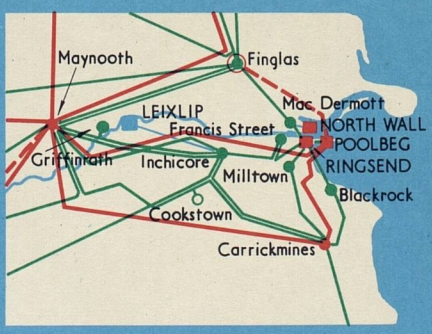
50 110kV stns feeding normal load
10 – – – industrial –
9 – · – not feeding into lower voltage networks

GWEEDORE
CLADY
Kiltoy
Letterkenny
CATHALEEN'S FALL
CLIFF
Sligo
Tawnaghmore
BELLACORICK
Moy
ARIGNA
Carrick-on-Shannon
Castlebar
SCREEB
Cashla
Galway
LANESBOROUGH
Athlone
SHANNON-BRIDGE
FERBANE
Derryfrench
Tynagh
Mullingar
to N.I.E.S.
Dundalk
Louth
Shankill
Drybridge
Platin
Navan
Knockumber
See inset 2 below for details
Maynooth
RHODE
ALLENWOOD
Finglas
Griffinrath
Inchicore
Carrickmines
Newbridge
PORTARLINGTON
GOLDEN FALLS
POLLAPHUCA
Portlaoise
TURLOUGH HILL
Carlow
Shelton Abbey
Arklow
MILTOWN MALBAY
Ennis
ARDNACRUSHA
Ahone
Killonan
Limerick
TARBERT
Rathkeale
Thurles
Kilkenny
Cahir
Ballydine
Wexford
GREAT ISLAND
Waterford
Butlerstown
Dungarvan
Charleville
Barrymore
Tralee
Mallow
Knockraha
INNISCARRA
Kilbarry
Midleton
CAHIRCIVEEN
Macroom
CARRIGADROHID
MARINA
Dunkettle
Haulbowline
Trabeg
Raffeen
Whitegate
Ringaskiddy
Dunmanway
Bandon
See inset 1 below for details

INSET 1



INSET 2



General outline of the GENERATION and TRANSMISSION SYSTEMS

31st March, 1976

HYDRO STATIONS
STEAM STATIONS
STEAM STATIONS PROJECTED
PUMPED STORAGE STATION
220 KV TRANSFORMER STATIONS
220 KV TRANSFORMER STATIONS PROJECTED
110 KV TRANSFORMER STATIONS
110 KV TRANSFORMER STATIONS PROJECTED
220 KV LINES
220 KV LINES PROJECTED
110 KV LINES
110 KV LINES PROJECTED
OTHER HIGH VOLTAGE LINES
NORTH/SOUTH INTERCONNECTION

Significant Facts

	1975/76	1974/75
REVENUE		
Electricity	£136,277,000	£111,261,000
Appliance Sales (Net of Taxes)	£4,535,000	£3,347,000
Installations	£2,365,000	£1,927,000
ASSETS	£423,658,000	£366,165,000
PAYROLL	£48,327,000	£37,779,000
SALES (million units)	6,259	6,153
GENERATION CAPACITY (MW)	2,000	2,090
PEAK DEMAND (MW)	1,478	1,412
LOAD FACTOR	57.1%	59.2%
NO. OF CUSTOMERS	931,469	901,000
NO. OF EMPLOYEES	10,910	11,505

(Cash figures are rounded off to the nearest thousand)

Cover Picture:

The Generating Hall, Turlough Hill Pumped Storage Station

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To the Minister for Transport and Power

The Board presents the Annual Report and Accounts for the year ended 31st March, 1976, in accordance with the Electricity (Supply) Acts, 1927/74. With Ministerial approval, the format of the Accounts has again been updated to incorporate changes in modern accounting standards as formulated by the various accounting bodies.

The activities and results of the year were again dominated by the continuing severe economic recession and by the high level of inflation in the country. In the last quarter, however, there was an increase in demand reflecting some improvement in economic activity. The financial result for the year was a surplus of £1,726,229. The deficit brought forward from 1974/75 was £8,861,123 and the accumulated deficit at the 31st March, 1976, was reduced to £7,134,894.

Attention during the year was concentrated on coping with the immediate effects of the recession and the consequential severe reduction in the Board's development programme. In these difficult circumstances it is pleasing to be able to report a return to a balanced financial position during the year, after meeting all the Board's statutory costs.

The Board is a service organisation which reflects the economic development of the country. The electricity supply business in Ireland, as in all other countries, demands long-term investment commitments. This is particularly difficult in present circumstances where there are so many uncertainties relating to future growth patterns and sources of primary energy. The Board must ensure that it can comply with the Government's stated policy that at no time will the country be short of electrical energy to help its development. It is essential, therefore, that the Board be able to respond quickly to any improvement in economic activity within the country. At the same time it must avoid unnecessarily heavy capital expenditure which could result in over-capacity in the medium term and which would increase the cost of electricity to the customer. The Board's strategies, therefore, incorporate maximum flexibility at the present time until the pattern of demand is clearer.

Finance:
The financial outcome for the year (a surplus of £1.7m.) is particularly satisfactory after the series of deficits of the previous five years. The main factors contributing to the result are the price increase which came into force in the May/June 1975 billing period, the abatement of the National Wages Agreement, manpower reduction and improved productivity. There was a number of adverse factors during the year including a reduction in the water inflow to the hydro stations and a temporary loss of some high-merit generating plant. In addition, there were increased costs of materials and plant repairs.

The Board is still concerned at the high level of accumulated deficit. The deficit must eventually be recovered from the customers and postponement of recovery measures forces additional foreign borrowing and merely adds to the burden which the electricity customer will have to bear eventually.

The Board is inevitably faced with recourse to considerable foreign borrowings to finance its capital programme. Foreign borrowings involve currency changes and the recent major movements in sterling parities have resulted in increasing the cost of servicing debt obligations and a significant adjustment in the level of the Board's foreign borrowing liabilities as at Balance Sheet date. The Board considers that it would be to the long-term advantage of its customers for it to set aside from revenue each year a specific amount towards the financing of the capital programme. When national economic conditions improve, provision for a more significant contribution to capital expenditure from internal sources should be a constant feature.

While the response to the two recent national loan issues was heartening, it is essential for the Board to continue to have a high financial standing in world money markets. As a prerequisite to maintaining this, the Board must fully pay its way in accordance with the financial structure laid down by the Electricity Acts. Despite the exceptional problems which have arisen over the years, the Board has not had recourse to the Government for a subvention to balance its Electricity Accounts. This is a

matter of critical importance to the Board and is the corner-stone of its financial standing with international banking institutions. There is continuing pressure on costs under all headings and, following a review of the projected trading outcome for 1976/77, an application to the National Prices Commission was made in February 1976 for an adjustment in prices to take effect as from June 1976 billings. The Government has approved a 5% increase in the basic price for electricity to take effect as from the July/August billing period, the first increase for 14 months. Despite the continuing high level of inflation, the Board is satisfied that it will be possible to maintain electricity prices substantially below the general inflation levels in the country.

Capital Programme:

In the present uncertainties it has been necessary to review the long-term capital programme. In view of the prevailing circumstances, the Board has cut its generating station construction programme by some 45%. At this time, 1,160 MW of plant is under construction compared with approximately 2,000 MW which would have been necessary under normal conditions. Present indications are that the new plant under construction at Shannonbridge, Poolbeg, Marina and Aghada, (Co. Cork) will be adequate to cater for demand up to the early 1980's. The cut back in the programme was effected through deferment of the proposed nuclear station and through a modification of earlier plans for development of Aghada and Poolbeg. One of the generating units on order for Poolbeg is being transferred to Aghada. While the commissioning date for the nuclear station has been deferred, all the necessary planning programmes will be completed.

Energy:

In framing its energy policy the Board has regard to the heavy financial burden on the community arising from the importation of fuel oil. It is especially sensitive to the national priorities and to the importance of making the most effective use of primary energy. It is now clear that, following the sharp increase in international oil prices in the past three years, a new price plateau for all forms of primary energy is being established world-wide. There has also been a substantial increase in peat prices. The days of cheap energy are gone. The Board is confident that electricity, because of its versatility as an energy source will in the future improve its position as the main energy form for all sectors of the community. At the end of the year, planning permission was cleared for the development of the new gas-fired station at Aghada and for the conversion to gas-firing of the existing station at Marina, using natural gas from the Kinsale field. The Board will be in a position to accept natural gas for electricity generation at the Marina plant in 1978 and the Aghada plant will be commissioned in 1980 when it is expected that the full supply of gas will be available. The Government's decision to allocate natural gas for electricity generation provides a desirable diversification of fuel sources for the Board, with consequent security of supply to the country and relief from additional foreign purchases. The Board's general strategy has been to develop a readiness for all possible forms of primary energy and this strategy facilitated the implementation of the Government's wish for the immediate utilisation of the natural gas.

Plans are also under way to make use of the additional peat which will be available from Bord na Mona's third development programme and some experiments have been carried out in new methods of burning low grade native coal. The Board is anxious that Irish indigenous resources should be fully developed in accord with national policies and consistent with economic feasibility.

Customer Service and Sales:

In the domestic sector, the growth rate was 2.1%. This overall figure included some evidence of buoyancy in the agricultural economy. In the commercial sector, the growth rate was 2.4% and sales to industry for the twelve months increased by 0.8%. Despite the difficulties experienced during the year, over 30,000 new customers were connected to the Board's networks. In pursuit of its objective of utilising Irish products to the maximum extent, the Board's purchases of materials in this country amounted to

£16m. Excluding major plant items such as boilers and turbines, this figure represents about 80% of equipment purchases. This exceptionally high figure in a technological industry was in large measure due to the continuous efforts of the Board's staff in providing help, advice and encouragement to Irish manufacturers in the design and development of suitable equipment. Quality control systems have been introduced into many Irish firms as a direct result of the Board's advice and are now providing a considerable benefit in the form of export orders to these manufacturers. The closest co-operation exists between the Board, the Institute for Industrial Research and Standards and industries throughout the country.

Staff:

Since its foundation, almost 50 years ago, the Board has pursued a policy of developing Irish expertise to the maximum extent. This has been achieved to a degree which is unique amongst electricity utilities. It has enabled the Board to provide the widest possible range of services including having its own staff carry out the design and construction of all its major civil, electrical and mechanical projects. As a result of the reduction in the capital programme, already outlined, the Board has been concerned to retain the skill which has been developed within the organisation and to protect the employment of its staff. Following the policy announced in last year's report of developing consultancy services abroad, the international market for these services has been explored and some significant contracts have already been signed. The Board's policy will be to compete openly for work abroad in the belief that it is well-placed to profit from this new activity and provide a new challenge to the organisation. There is also the possibility that, through the Board's new efforts, there will be further opportunities for export of industrial materials.

The implementation of various staff productivity agreements negotiated over the past few years continued and the total number of staff over the period 1971 to 1976, during which there was a growth in business of around 30%, has now been reduced from 12,138 to 10,910. There were no official strikes in the year and the number of days lost through short unofficial stoppages continued the downward trend of previous years. The supply of electricity was not interrupted as a result of industrial action.

The Board again takes this opportunity to thank its staff for the manner in which they performed their duties during another difficult year and it faces the uncertainties of the future with the confidence that it will overcome whatever further difficulties may arise.

Board Membership:

Mr. T. MacMahon, B.E., B.Sc., a member of the Board since 1953 retired on 30th April, 1976. The Board wishes to place on record its appreciation of his services and of the contribution that he made to the development of the organisation.

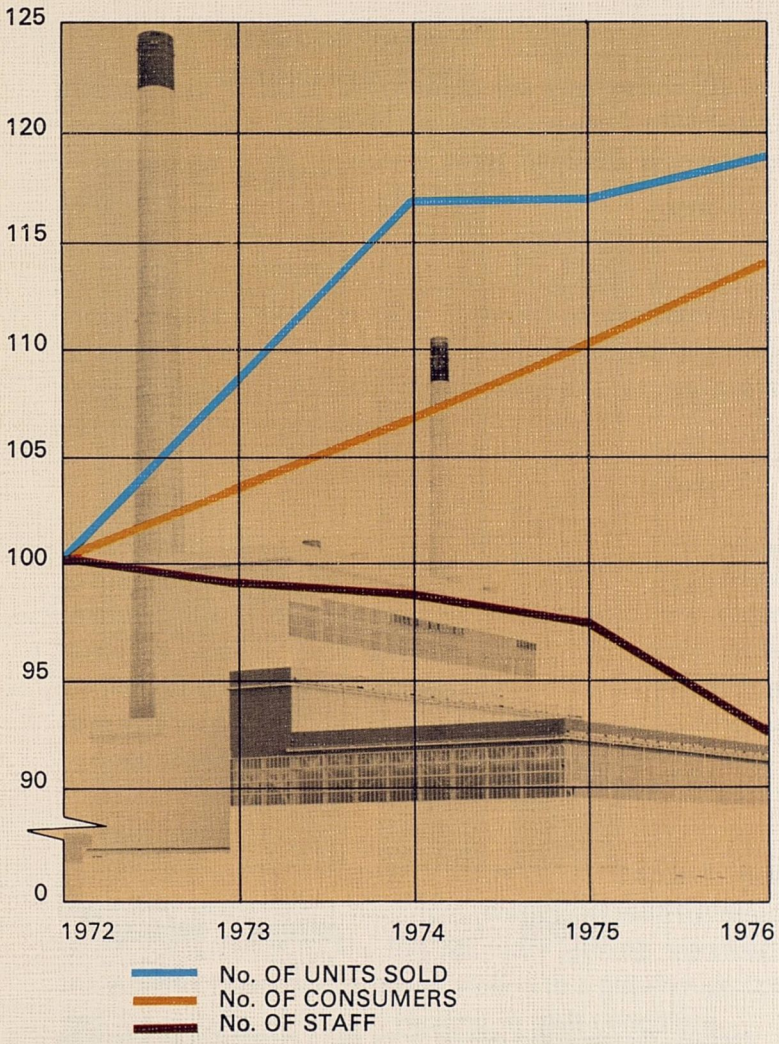
(Signed) *C. T. G. Dillon,* Chairman
B. Sweetman Fitzgerald
J. A. Ryan
C. Gordon Lambert
C. Kelleher
S. Scally

(Signed) *J. F. Williams,* Secretary

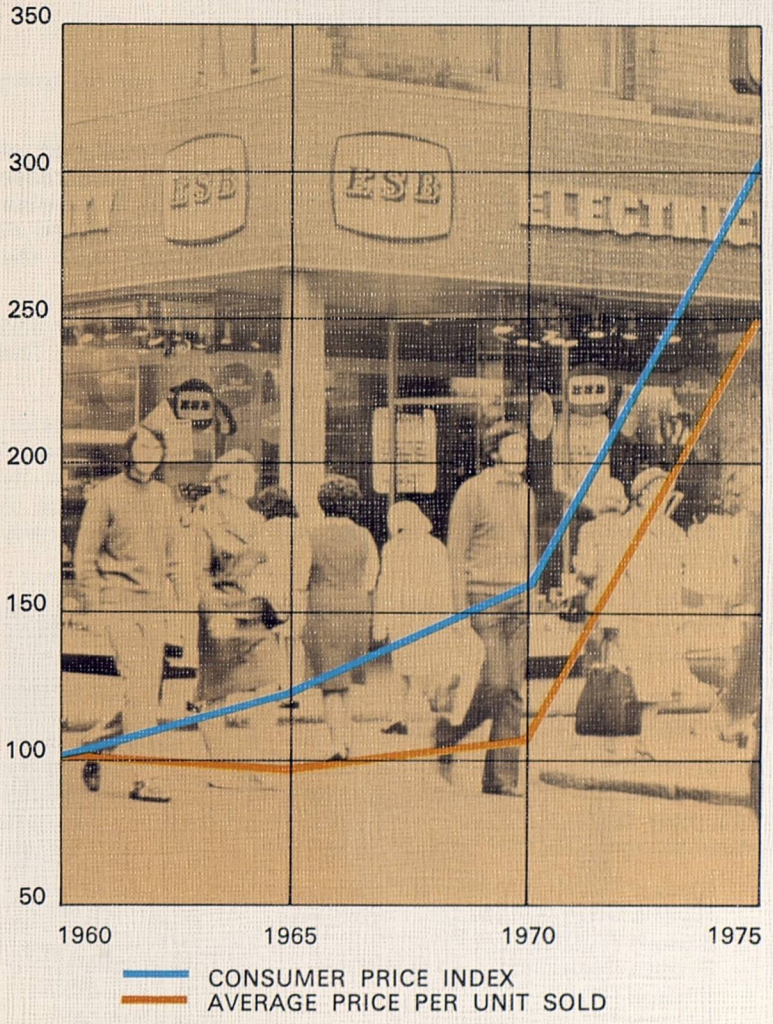
13th July, 1976

GROWTH OF E.S.B.

1972 – 1976



COMPARISON OF INCREASES IN CONSUMER PRICE INDEX WITH INCREASES IN AVERAGE PRICE PER UNIT SOLD



Electricity Production

System demand required the generation of 7,535 million units an increase of 1% over the previous year (see footnote).

The decreasing demand trend experienced in the latter part of last year continued into the present year resulting in a decrease of 2.7% from April to the end of November; in early December the growth in demand resumed and from then until the end of the year there was an increase of 7.5% compared with the corresponding period last year.

The peak demand of 1,478 MW was 4.7% up on last year and occurred on Tuesday, 3rd and Wednesday, 4th February. The annual load factor was 57.1%.

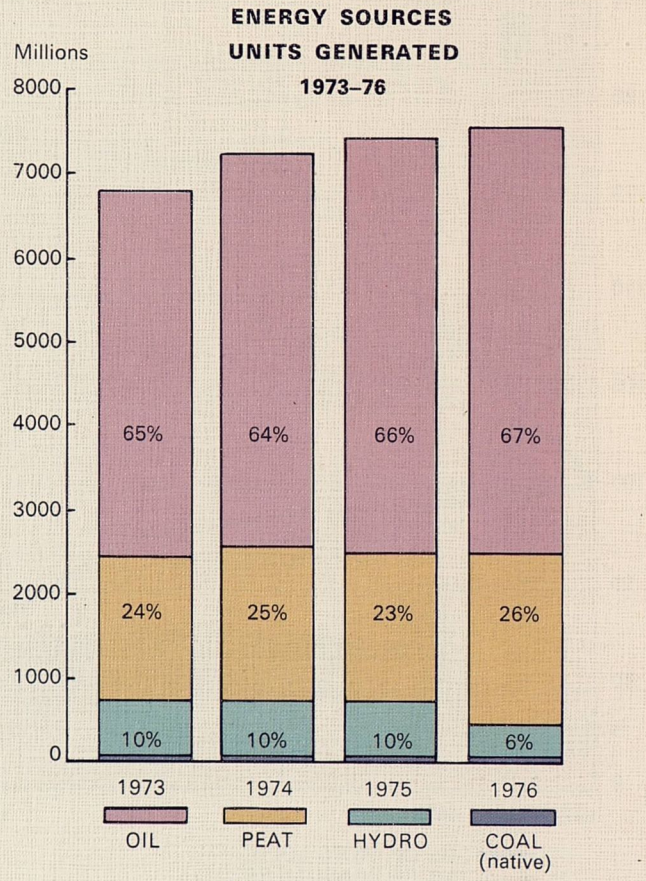
Due to low inflows to the catchment areas, the total generation from conventional hydro stations was only 68% of the annual average. It was possible to make up most of this deficit by increased use of turf and Arigna coal so that the percentage of total units generated from imported fuel was only marginally higher than the previous year.

There was a voltage reduction on one day in October and on one day in December due to coinciding faults on a number of items of generating plant.

System frequency was maintained between 49.87 Hz and 50.13 Hz for 95% of the time.

The Generating Station at Pigeon House was retired during the year. It was the oldest station on the Board's system and for some years had been a standby station only. No new plant was commissioned and the total installed capacity is as follows:

Hydro Plant (Conventional)	**219 MW**
Hydro Plant (Pumped Storage)	**292 MW**
Steam Plant (Sod Peat)	**117.5 MW**
Steam Plant (Milled Peat)	**290 MW**
Steam Plant (Oil)	**1038 MW**
Steam Plant (Coal)	**15 MW**
Gas Turbine Plant (Oil)	**28 MW**
	1999.5 MW



Footnote: The total system demand for the year is in respect of an accounting year of 53 weeks. The 1% increase quoted was calculated by comparing the system demand for the first 52 weeks of 1975/76 with the total system demand for 1974/75.

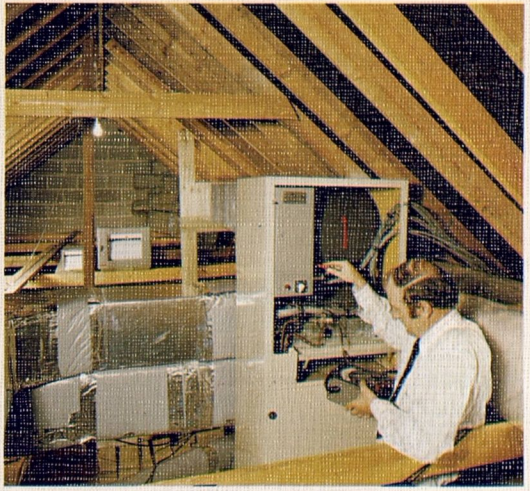
Electricity Sales

The number of units sold during the year increased by 1.7% (compared with 0.02% in the previous year). Domestic sales increased by 2.1%, industrial sales by 0.8% and commercial sales by 2.4%.

The Board continued to help customers to alleviate the effects of increased energy costs by a variety of promotions and contributions on the efficient and safe use of energy and by assisting industry to improve productivity.

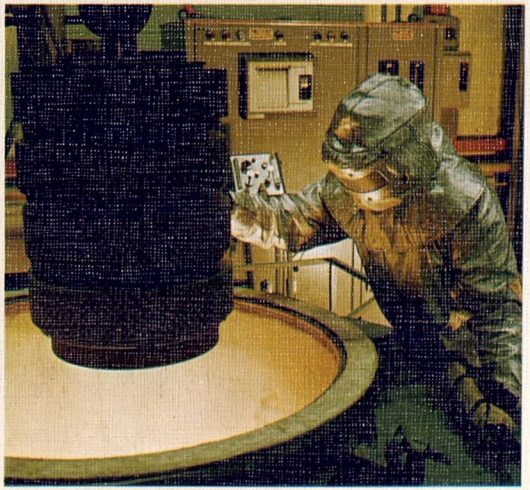
An investigation into the commercial use of heat pumps for space heating commenced during the year; it is intended to establish the level of economic performance, the degree of customer acceptability and the effect on supply networks. Some heat pumps have been installed on a trial basis in domestic premises as part of the investigation. Tests also commenced on the use of solar heating panels for waterheating.

Other investigations include a study of the increased need for electricity on the farm in the future (carried out with the assistance of An Foras Taluntais and the voluntary farming organisations), the supply of heat from a power station to a glasshouse complex and the viability of District Heating in Irish conditions.

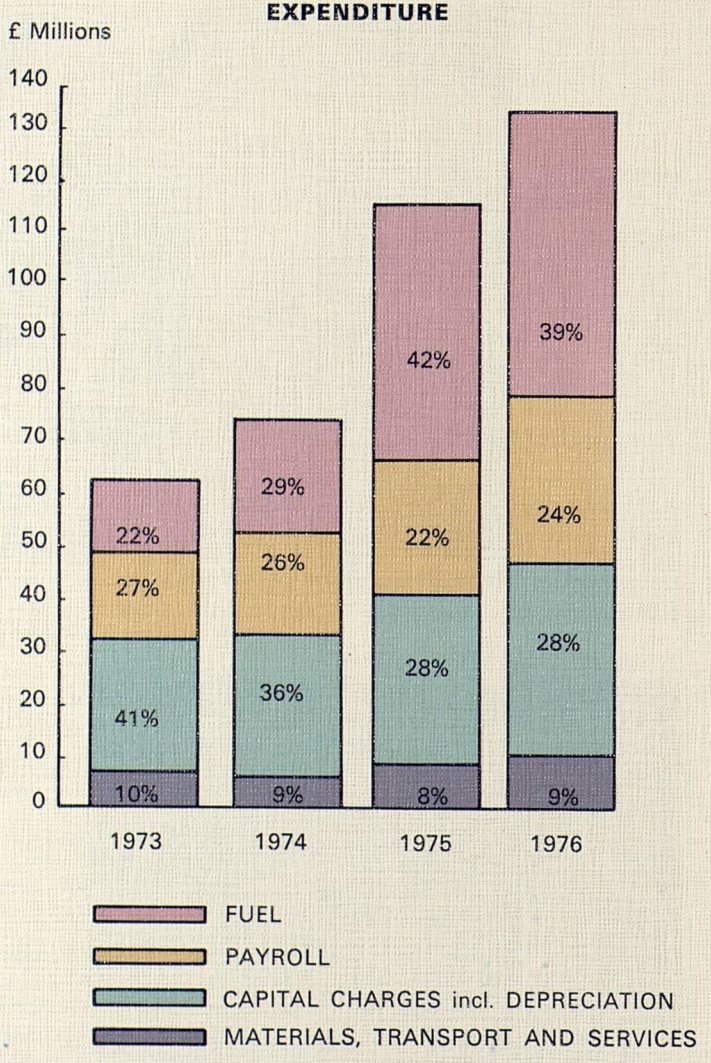


A heat pump under test in a customer's home.

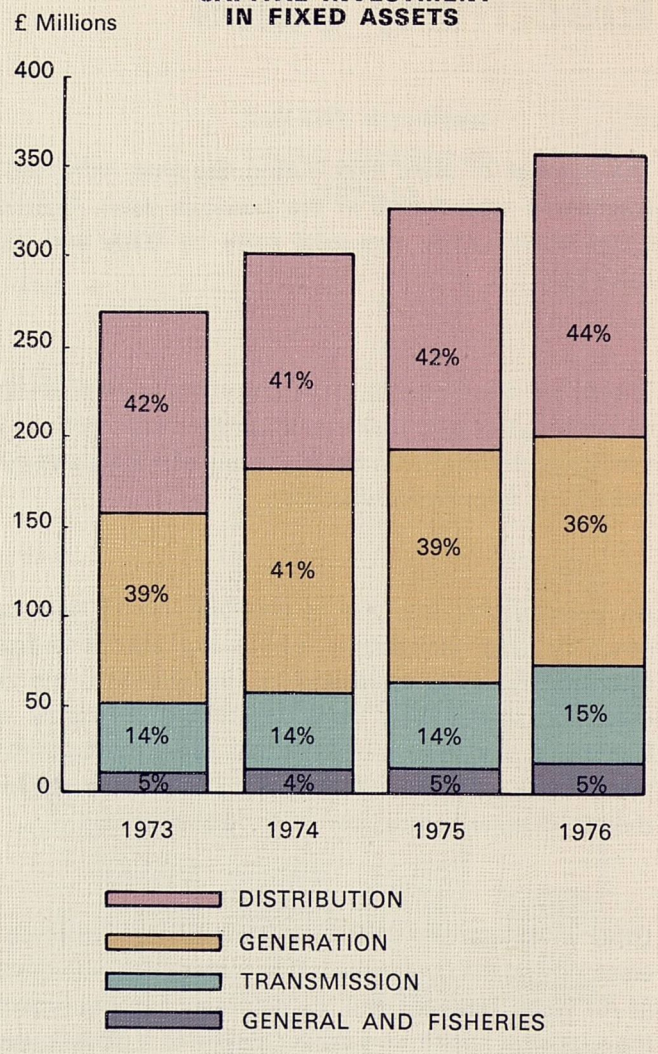
Loading of a 150 kW carburising furnace.



EXPENDITURE



CAPITAL INVESTMENT IN FIXED ASSETS



Finance

Revenue and Expenditure:

Revenue from the sales of electricity and miscellaneous revenue totalled £136,933,617, an increase of £25,241,295 over the previous year. Expenditure incurred was £135,133,440, an increase of £20,462,110 over the figure for 1974/75.

The summarised Electricity Revenue Income and Expenditure figures are as follows:

	Year ended 31st March 1976 £	*Preceding Year* £
Fuel	53,117,229	47,805,481
Payroll and other direct costs	44,308,561	34,414,702
Capital charges including depreciation	37,707,650	32,451,147
	£135,133,440	£114,671,330
Revenue (including miscellaneous income)	£136,933,617	£111,692,322
	£1,800,177 (Surplus)	£2,979,008 (Deficit)

Taking into consideration profits on trading activities and deducting the expenses of loan issues, the result for the year was a surplus of £1,726,229, which decreases the total deficit carried forward to 1976/77 from £8,861,123 to £7,134,894.

Capital Expenditure:

Expenditure during the year amounted to £41,000,209. Allowing for retirements of £3,507,253 this increased the Board's investment in capital assets to £423,657,957 (see Schedule D).

Assets amounting to £24,781,374 were brought into commission during the year; rural electrification accounted for £6,766,351 of this.

At 31st March, 1976 assets in commission amounted to £358,558,650, and work in progress totalled £65,099,307; work approved amounted to £541,594,636 leaving a balance of £117,936,679 of approved work to be completed. The Electricity (Supply) (Amendment) Act, 1974, authorises capital expenditure of £700 million for general purposes including rural electrification.

Capital Borrowing:

The capital expenditure in the year was financed by:–

(a) borrowing brought forward from the previous year,

(b) internal resources arising mainly from provisions for depreciation and supply contributions,

(c) private placements with European banks,

(d) further instalments of the loans from the World Bank,

(e) medium term credits for purchase and erection of major plant,

(f) rural subsidy from the Minister for Finance.

Major Construction Works

Due to the fall-off in the growth of demand for electricity, the Board has not entered into further contracts for major construction works other than those to which it is already committed. It is, however, studying potential areas of development in the event of the renewal of the growth trend of previous years.

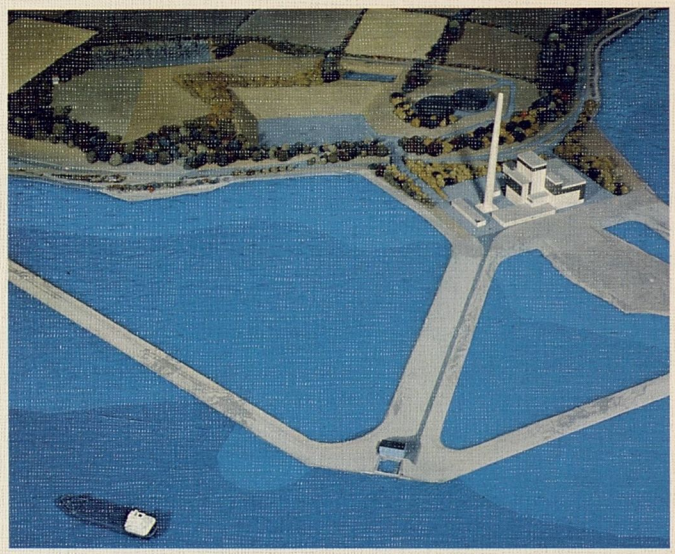
Special consideration is being given to projects based on native fuel. It is planned to increase the load factor of existing milled peat stations by some re-design and modifications to cater for additional peat supplies from Bord na Mona. The possibility of building new peat generating plant is also being examined but no decision has been made.

Preliminary tests have been carried out to see whether low-grade "crow" coals from the Arigna area can be used efficiently in boilers now being developed. Investigations are continuing but it will be a considerable time before a definite conclusion can be reached.

Research work continued on less conventional methods of generating electricity, e.g. wind power, wave power, solar power, refuse incineration, etc. Methods of using energy more efficiently, e.g. District Heating or other thermal load combined with electricity generation are also under investigation. It is unlikely, however, that there will be any major developments in these areas in the short-term.

Tarbert Generating Station Extension, Co. Kerry (Oil Fired) 2–250 MW Sets: (The capacity of the existing Station is 2–60 MW Sets)

The commissioning of the first 250 MW unit is scheduled for May 1976 – five months later than envisaged last year. The main reasons for the delay were industrial disputes. The commissioning of the second 250 MW unit is scheduled for early 1977.



A model of the proposed Generating Station at Aghada, Co. Cork.

Shannonbridge Generating Station Extension, Co. Offaly (Milled Peat Fired) 1–40 MW Set: (The capacity of the existing Station is 1–40 MW Set)

The civil engineering work was completed and the mechanical and electrical plant was in the final stages of erection. The unit is scheduled to be commissioned in August 1976.

Poolbeg Generating Station Extension, Dublin (Oil Fired) 1–270 MW Set: (The capacity of the existing Station is 2–120 MW Sets)

The main civil works contract is proceeding satisfactorily on target. Construction of the chimney shell had commenced. Structural steel erection was well advanced.

Erection of the main plant is due to commence in July 1976 and the scheduled completion date for the extension is 1978/79.

Aghada Generating Station, Co. Cork (Gas Fired) 1–270 MW Set

One of the two boiler/turbo-alternator units originally ordered for Poolbeg will now be installed in Aghada.

Planning permission was obtained. The enquiry documents for the first phase of the site development were nearing completion. The preparation of the contracts for the remaining site development work and the main civil works contract was in progress.

The scheduled completion date is 1980/81.

Marina Generating Station Extension, Cork (Gas Fired) 1–83 MW Set: (The capacity of the existing Station is 2–30 MW Sets and 1–60 MW Set)

A gas turbine is to be integrated with the existing steam turbine plant to form a high efficiency combined cycle unit. Conversion of the existing boiler plant to allow for the use of gas is also planned.

The unit is scheduled to be commissioned in 1978/79.

Nuclear Generating Station Project

The Nuclear Generating Station planned for Carnsore Point, Co. Wexford has been deferred indefinitely in view of the decline in the growth rate. The setting of a new commissioning date would depend on the resumption of the growth of demand for electricity and developments in off-shore oil and gas exploration.



Construction work in progress at Poolbeg Generating Station extension, Dublin.

Transmission

220 kV Transformer Stations:

A major extension at Tarbert, Co. Kerry was commissioned to cater for the increased generating capacity. The uprating of Knockraha, Co. Cork and the extension at Shannonbridge, Co. Offaly were completed. Further extensions of Knockraha and Maynooth were nearing completion.

Design and construction work continued on new stations at Finglas, Co. Dublin and Cashla, Co. Galway and on the extension at Poolbeg.

110 kV Transformer Stations:

A new station at Celbridge, Co. Kildare and extensions to two existing stations were completed; construction work was in progress on two new stations. Design work had started on the station at Cobh, Co. Cork for supply to the Nitrigin Eireann Teoranta fertiliser plant at Marino Point. Supply to this plant will be taken at 110 kV through its intake station. The contract for the design and provision of this station, valued at £300,000, was awarded to the Board by the main contractor for the overall project.

The programme of renewals and replacement of equipment in older stations and work associated with the solid earthing of the 110 kV neutral continued.

Lines and Cables:

The 220 kV line from Tarbert to Killonan was completed and the 220 kV line from Tarbert to Knockraha was well advanced. Work was also in progress on 220 kV lines from Tarbert to Cashla and from Maynooth to Donard. The routes for four other 220 kV lines were being surveyed.

During the year 28 Kms. of new 110 kV lines were erected and commissioned and a further 155 Kms. were under construction and nearing completion. 145 Kms. of the old copper lines were retired, leaving 227 Kms. still in operation.



A maintenance inspection on a 220 kV transmission line with the aid of a line bicycle.

Short lengths of 220 kV cable were laid at Tarbert and Shannonbridge Generating Stations. Deliveries of material for the new 220 kV cable from Poolbeg to Finglas commenced and tenders were received for the 220 kV cable crossing of the River Shannon at Tarbert.

Sub-contracts were obtained for the installation of a total of 42 Kms. of telephone cable for the Department of Posts and Telegraphs.

Distribution

The seven year planned maintenance programme for distribution networks commenced during the year and substantial progress was made. The programme and the associated training of further crews to work on "live" high voltage lines will improve the security of supply by both improving the standard of the networks and by reducing outage times for maintenance purposes. Training courses for other organisations, such as AnCO, were also developed and delivered at the Board's Line and Cable Training Schools.

Liaison with all interests in the building industry was strengthened with a view to avoiding accidents caused by contact with live Board plant.

Tyrrellspass, Co. Westmeath, where electricity networks were placed underground as part of a European Architectural Heritage Year project.



A new system of supporting wood poles in rock foundations was introduced and used extensively. The method, which had previously undergone rigorous testing and which is in advance of current international practice, consists of a steel tripod bolted to both pole and rock. It reduces significantly the construction time and avoids the use of explosives and tedious excavation.

The Board's Cable Training School has been carrying out tests to determine the effects of heavy overloading on 10 kV underground cables with a view to establishing safe loading limits. It is hoped that the information obtained will enable greater use to be made of existing cables thus deferring some expenditure on new cables for additional load without impairing the reliability of supply.

The Board co-operated with other bodies such as Bord Failte, the local Development Association, the County Council and Department of Posts and Telegraphs in the renovation of the village of Tyrrellspass, Co. Westmeath for European Architectural Heritage Year; as part of this project the electricity networks in the central portion of the village were placed underground by the Board. A television film, produced by Bord Failte, documented the various stages of the renovation programme.

The programme of placing networks underground was also continued in Kilkenny, Cavan and Killarney in association with the Local Authorities. A feature of this work was the replacement of older public lighting units by a much more efficient system mounted on graceful columns.

An electricity supply system was built and commissioned on Inishmore Island by the Board who acted as contractors for the overhead networks and as consultants for the Diesel Generating Station. The scheme was financed by Roinn na Gaeltachta and is run by Comhar Chumann Arann Teo. Connection to the mainland networks would have been uneconomic.

Other islands in Gaeltacht areas, e.g. Inisheer, Cape Clear and Tory Islands, already have similar electricity supply schemes.

Rural Electrification Scheme 1975/76:
During the year 3,964 new rural customers were connected under the final phase of the subsidised Rural Electrification Programme, bringing the total number of customers connected under the scheme to date to 405,890.

Trading

The three activities – appliance sales, appliance repairs and installations contracts – showed a combined net profit of £118,696 on a turnover of £7,599,118. In the previous year there was a combined net loss of £12,975 on a turnover of £5,771,234.

Appliance Sales:

There was a very significant increase in the sale of electrical appliances by the Board. Turnover increased by 36% from the previous year to £4,535,451. There was a net profit of £214,469 compared with a net loss of £6,493 in the depressed trading conditions of the previous year.

The Board has continued to promote the sale of Irish-made electrical appliances. A further extension of support for Irish industry during the year was the introduction of Irish made ESB-Brand attic insulation.

Appliance Repairs:

As mentioned in the last Annual Report, the Board is committed to the elimination of losses on its appliance repair service.

The loss in 1975/'76 was £180,912 on a turnover of £698,361 compared with a loss of £143,042 on a turnover of £497,420 in the previous year. An increase in charges for repairs, which required the approval of the National Prices Commission, came into effect in the latter half of the year. It is expected that there will be further significant progress in reducing the loss on this service in the current year.

Installations Contracts:

This was again a satisfactory year for the Board's contracting service. The value of contracts completed at £2,365,306 exceeded the previous year's turnover by 23%. Net profit at £85,139 was 38% less than the record profit earned in the previous year, reflecting the very tight pressure on margins in the trade.

It is difficult to be optimistic about the prospects in the contracting trade over the next year or two. There are clear indications that business will be relatively slack with consequent further pressure on profit margins.





The Board's policy of encouraging Irish industry to make plant and materials for its construction activities extends also to the electrical appliances which it sells.

The pictures show Food Freezers for sale in E.S.B. Shops being manufactured in a North Dublin factory and E.S.B. Brand Cookers being manufactured in a Co. Louth factory.

Personnel

The peaceful Industrial Relations climate was a noteworthy feature of the year; there was no official strike and stoppages were confined to isolated incidents of short duration. There was no interruption in the electricity supply and the downward trend in the number of man days lost continued. One unsatisfactory development, however, was the increased and disruptive unofficial action at the Tarbert Generating Station Extension site which delayed the commissioning of the new plant by some months.

An Agreement was concluded with the Trade Unions to extend the term of the Industrial Council for a further period of three years and Mr. Con Murphy was again unanimously selected as Chairman for a third term. The Council was first established in 1970 and it has proved to be a very valuable institution in the development of a good industrial relations climate.

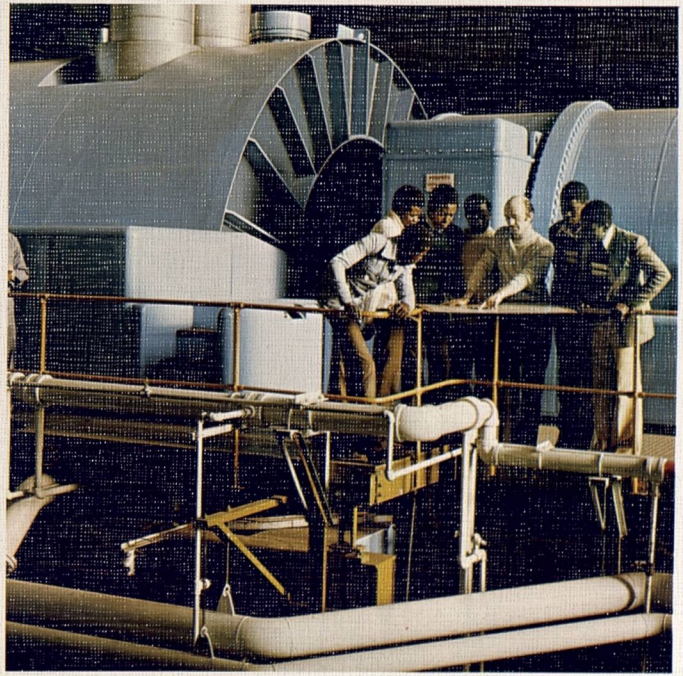
A Joint Working Party developed a framework for joint consultation through the establishment of a new structure of Works Councils in each location. At the end of the year the proposals were under consideration by the Trade Unions and Management.

During the year negotiations were concluded on the development of a single status employment for general workers, craft workers, and traditional white-collar categories. The implementation of various productivity agreements negotiated with staff continued; all agreements of this nature now include a peace clause and machinery for the effective resolution of disputes, both at local and national level.

Progress was made in the joint development of Job Evaluation Schemes for different categories of staff. Various other Joint Working Parties were in existence dealing with different aspects of conditions of employment and work methods.

Arising from the curtailment of capital projects, the Board has undertaken a marketing programme to provide external work for staff in consultancy and related fields as an alternative to compulsory redundancy. At the end of the year the long-term prospects of developing substantial business were good.

The total number of staff in the E.S.B. at 31st March, 1976 was 10,910.



Nigerian engineers and technical staff undergoing training in an E.S.B. generating station.

Fisheries and Environment

The total expenditure by the Board in the Fisheries and Environment areas amounted to £313,841. Income from the sale of salmon and eels was £126,068, and miscellaneous income amounted to £9,386.

During the summer the salmon run in the River Shannon was good but the relatively dry winter adversely affected the eel catch.

As a result of the experimental work on the rearing of salmon in sea water, agreement was reached with Gaeltarra Eireann to start a joint salmon rearing project on a larger scale in May, 1976.

There was a record run of salmon at Parteen Hatchery Fish Pass and more than 50% of the fish examined were hatchery reared. A large quantity of salmon ova was supplied by the Board for the Erne system and ova were also provided for rivers in Cork, Donegal and Mayo.

The Board welcomed the introduction of the Local Government (Water Pollution) Bill, 1976; it was disappointed that the Bill did not contain a provision for administration either through a central authority or through a number of agencies based on river catchments.

The Board's involvement in control of water quality was maintained throughout the year. There is now a growing awareness that the long-term interests of the country are endangered by water pollution, and the Board is actively engaged in bringing these dangers to the notice of industry and to the public generally.

The Board's annual Fisheries Report, published separately, deals with these activities in more detail.

A member of the E.S.B. staff monitoring the water quality of a river.



Accounts and Schedules for year ended 31st March, 1976

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Account No. 1

Profit and Loss Account

1974/1975 £000's		1975/1976 £000's
	Operations	
5,161	Electricity Trading before Amortisation of Borrowings (Schedule A)	11,904
(13)	Appliance Sales, Repairs and Installations Contracts Trading, Profit/(Loss) as per Schedule B	119
(88)	Expenses on new Borrowings	(193)
5,060		11,830
(8,140)	Amortisation of Borrowings, as required by Section 21 (2) of the Electricity (Supply) Act, 1927 (See Note – Schedule L)	(10,104)
(3,080)	Surplus/(Deficit) for Year	1,726
	Non-Operating Income and Credits	
1,942	Non-repayable Supply Contributions	2,189
1,488	Credits arising on ESB Stock Cancellations	1,239
443	Interest on Sinking Fund Investments for Repayment of Borrowings	529
793		5,683
(3,430)	To Capital Reserves	(3,428)
(443)	To Sinking Funds for Repayment of Borrowings	(529)
(5,781)	Deficit brought forward from previous year	(8,861)
£(8,861)	Surplus/(Deficit) carried forward to next year	£(7,135)

Note: Adjustments in year-end parities of foreign borrowings have been reflected in Repaid Capital Reserve (Schedule I)

Balance Sheet

Account No. 2

31st March, 1975					31st March, 1976
£000's	*Reference*		£000's	£000's	£000's
386,165	Schedule D	**Total Investment in Capital Assets** including work-in-progress		423,658	
123,848	Schedule D	Less Accumulated Depreciation		135,772	
262,317					287,886
62,502	Schedule E	**Current Assets**		80,955	
		Less:			
35,920	Schedule E	**Current Liabilities**		39,496	
26,582		**Net Current Assets**			41,459
6,720	Schedule F	**Sinking Fund Investments,** at cost			7,557
386	—	**Deferred Expenditure**			270
£296,005					£337,172
		Financed as follows:			
234,086	Schedule G	**Borrowings**			283,928
		Reserves			
63,366	Schedule I	Capital		52,099	
6,839	—	Sinking funds for borrowings		7,705	
		Revenue Reserves:			
500	—	Plant, self-insurance	500		
75	—	Others	75		
				575	
(8,861)	Account No. 1	Profit and Loss Account balance (deficit)		(7,135)	
61,919					53,244
£296,005					£337,172

Note: At 31st March, 1976 contractual capital commitments amounted to approximately £49,000,000 (1975 – £36,000,000)

Signed: C. T. G. DILLON *Chairman* *Signed:* J. J. KELLY *Chief Executive*
J. B. O'DONOGHUE *Director, Finance*

Schedule A

Electricity Income and Expenditure Account

1974/75						1975/76
£		£	£	£	£	£
111,261,190	**Income** – Electricity Sales	136,277,317				
431,132	– Miscellaneous Income	656,300				
111,692,322						136,933,617
	Expenditure:	**Generation**	**Transmission**	**Distrbuition**		
47,805,481	Fuel	53,117,229				
27,076,887	Operation, maintenance and local charges	15,249,146	1,734,065	18,793,877		
7,182,790	General charges	3,492,974	1,082,308	3,777,804		
12,630,000	Depreciation	5,621,480	1,926,724	5,964,796		
155,025	Fisheries net cost	178,387				
94,850,183		77,659,216	4,743,097	28,536,477	110,938,790	
11,681,396	Interest	5,621,500	2,172,718	6,296,514	14,090,732	
106,531,579		83,280,716	6,915,815	34,832,991		125,029,522
5,160,743						11,904,095
8,139,751	Amortisation of Borrowings as required by Section 21 (2) of the Electricity (Supply) Act, 1927	4,047,410	1,654,423	4,402,085		10,103,918
£(2,979,008)	Surplus/(Deficit)					£1,800,177

Notes:

1. Charges include: Local Rates £571,376 (1974/75 £562,028), Central Transport and Stores Depot Costs £783,098 (1974/75 £596,276), General Publicity £280,962 (1974/75 £266,120), Bad Debts £162,861 (1974/75 £115,758), Audit Fee £11,000 (1974/75 £11,000). Board Members' Remuneration (including full-time Chairman) £21,686 (1974/75 £15,768). Fuel includes purchased electricity £422,184 (1974/75 £156,777).
2. Electricity Sales are exclusive of VAT – £1,965,266 (1974/75 £7,513,478) - zero rated since 1st July, 1975.

Trading Account
Appliance Sales, Repairs and Installations Contracts

Schedule B

1974/75					1975/76			
Appliance Sales	Appliance Repairs	Installations Contracts	Total		Total	Appliance Sales	Appliance Repairs	Installations Contracts
£	£	£	£		£	£	£	£
3,347,034	497,420	1,926,780	5,771,234	Turnover, exclusive of VAT	7,599,118	4,535,451	698,361	2,365,306
2,613,078	466,449	1,496,837	4,576,364	Direct Costs	5,974,259	3,445,599	641,698	1,886,962
733,956	30,971	429,943	1,194,870	Gross Profit	1,624,859	1,089,852	56,663	478,344
				Overheads:				
378,324	173,622	142,439	694,385	Payroll costs	952,557	514,013	235,281	203,263
47,639	—	—	47,639	Publicity	41,561	41,561	—	—
82,203	—	—	82,203	Premises costs	89,156	89,156	—	—
55,013	391	20,413	75,817	Sundry expenses	66,994	40,733	2,294	23,967
177,270	—	130,531	307,801	General charges and interest, as apportioned	355,895	189,920	—	165,975
740,449	174,013	293,383	1,207,845		1,506,163	875,383	237,575	393,205
£(6,493)	£(143,042)	£136,560	£(12,975)	Profit/(Loss) transferred to Profit and Loss Account	£118,696	£214,469	£(180,912)	£85,139

Schedule C

Statement of Source and Application of Funds

1974/1975 £	Reference		1975/1976 £
		Source:	
5,062,661	Account No. 1	Operations before Amortisation of Borrowings*	11,832,778
13,277,321	Schedule D	Depreciation	14,278,431
841,843	Schedule D	Credits on disposal of assets	1,153,090
443,195	Account No. 1	Interest on sinking fund investments	529,303
19,625,020			27,793,602
1,942,162	Schedule I	Non-repayable supply contributions	2,188,934
29,101,146	Schedule G	Borrowings	42,741,089
£50,668,328			£72,723,625
		Application:	
42,229,643	Schedule D	Capital expenditure	41,000,209
7,183,813	Schedule F	Redemption of borrowings (net)	15,531,522
—	Schedule F	Payment of premium on 6% Premium Stock 1975	594,077
1,895,625	Schedule F	Increase in sinking fund investments	837,034
(640,753)	Schedule E	Net movement in current assets, current liabilities and in deferred expenditure	14,760,783
£50,668,328			£72,723,625

*Adjusted for amortisation on Fisheries (£2,631)

Statement of Capital Assets

Schedule D

	Total at 31st March, 1975 £	Additions Less Retirements during year £	**Total at 31st March, 1976** £
Generation	131,481,205	(843,824)	**130,637,381**
Transmission	47,325,557	6,092,740	**53,418,297**
Distribution	141,117,668	14,850,125	**155,967,793**
General Buildings, Transport and Working Equipment	17,184,307	1,175,080	**18,359,387**
Fisheries	175,792		**175,792**
	337,284,529	£21,274,121	**358,558,650**
Work-in-Progress, including payments on account	48,880,472		**65,099,307**
Total Investment in Capital Assets (at cost)	386,165,001		**423,657,957**
Deduct Accumulated Depreciation, as below	123,848,054		**135,772,322**
Net Investment in Capital Assets	£262,316,947		**£287,885,635**

Accumulated Depreciation:	£	£	£
Provision for depreciation of assets, together with proceeds of disposal or stores value of assets retired, less assets retired, as at 31st March, 1975		123,848,054	
Movements in year:			
Depreciation of assets	14,278,431		
Credits arising on disposal of assets retired	1,153,090		
Assets retired	(3,507,253)	11,924,268	
Total as at 31st March, 1976			**£135,772,322**

Note: Work carried out in the year amounted to £41,000,209 (1974/75 £42,229,643)

Schedule E

Statement of Current Assets and Current Liabilities

31st March, 1975					31st March, 1976
£			£	£	£
	Current Assets				
555,190	Cash at bank and in hand			334,378	
4,697,464	Temporary cash deposits			15,187,955	
5,252,654					15,522,333
		Nominal Value			
	Investments, at cost:	£			
1,306,464	E.S.B. Stocks	2,706,801	(1974/1975 £2,121,176)	2,003,101	
—	Government Stocks	3,781,772	(1974/1975 £ —)	3,034,473	
495,652	Units of Account	593,043	(1974/1975 £ 604,465)	521,878	
1,802,116					5,559,452
	Accounts Receivable:				
	Electricity: billed		12,341,129		
	unbilled		12,979,038		
24,404,846				25,320,167	
7,072,074	Trading including Hire Purchase			9,144,785	
1,865,438	Miscellaneous			2,239,209	
33,342,358					36,704,161
	Materials at cost:				
10,090,540	Fuel			10,685,601	
11,012,072	Others			11,014,051	
21,102,612					21,699,652
1,002,779	Repayable Work-in-Progress at cost				1,469,211
£62,502,519					£80,954,809
	Current Liabilities				
11,756,488	Accounts Payable				13,644,339
659,564	Progress Payments on Repayable Work-in-Progress				831,455
1,000,000	Borrowings – Less than Twelve Month Term				1,049,679
4,660,038	– To finance Trading Account debtors				6,157,468
2,854,894	Supply Contributions and Deposits				5,153,365
9,042,386	Accrued Charges and Provisions				6,932,333
5,946,616	Accrued Interest on Borrowings				5,727,218
£35,919,986					£39,495,857

Statement of Redemption of Borrowings and Sinking Fund Investments

Schedule F

1974/1975 £		1975/1976 £
	Redemption:	
229,339	Sinking Fund utilised in year	2,641,903
6,445,134	Funded redemption – Schedule H	6,534,742
509,340	Non-funded redemption	6,354,877
1,488,320	Credits arising on ESB Stock cancellations	1,239,141
£8,672,133	Total redeemed during year – Schedule G	£16,770,663

Sinking Fund Investments:

		Nominal £	Market £	Cost £	
	Opening Balance:				
2,286,854	ESB Stocks	2,559,873	1,526,012	2,206,971	
2,537,253	Government Stocks	2,646,500	1,920,747	2,537,253	
—	Bank Deposits			1,975,507	
4,824,107					6,719,731
427,807	Interest Received				501,206
1,697,156	Addition in year – Schedule H				3,571,807
6,949,070					10,792 744
	Utilised in year:				
	Towards redemption of borrowings			2,641,903	
	Payment of premium on 6% Premium Stock 1975			594,077	
229,339					3,235,980
	Closing Balance:				
	ESB Stocks	1,443,768	1,104,235	1,382,733	
	Government Stocks	5,864,728	4,717,289	5,307,578	
	Bank Deposits			866,453	
£6,719,731					£7,556,764

The Closing Balance £7,556,764 plus interest accrued £147,512 represents the full Sinking Fund Reserve of £7,704,276 (1974/1975 £6,839,146).

Schedule G

Statement of Borrowings

Amount of Borrowing			Balance Outstanding 31st March, 1975	Borrowed during year	Redeemed during year	Adjustment for currency changes	Balance Outstanding 31st March, 1976
£			£	£	£	£	£
	Irish Pound and Sterling:						
68,450,236	Advances	– Minister for Finance	50,639,832	—	1,181,137	—	49,458,695
500,000	Loan	– New Ireland Assurance Co. Ltd. 6% – 1962/87	329,104	—	19,406	—	309,698
14,865,000	Loan	– Central Bank of Ireland 7¼% – 1972/87	13,011,516	—	711,200	—	12,300,316
4,791,500	Loan	– Central Bank of Ireland 5½% – 1973/79	2,738,000	—	684,500	—	2,053,500
10,000,000	Stock	– 5% – 1966/75	5,432,504	—	5,432,504	—	—
5,000,000	Stock	– 6% – 1968/78	2,650,430	—	100,000	—	2,550,430
12,000,000	Stock	– 6% – 1982/87	6,911,549	—	825,000	—	6,086,549
16,500,000	Stock	– 6% – 1984/89	10,241,525	—	838,084	—	9,403,441
13,000,000	Stock	– 7% – 1986/91	9,894,683	—	559,053	—	9,335,630
7,000,000	Stock	– 7¼%– 1988/93	5,952,562	—	358,626	—	5,593,936
9,250,000	Stock	– 9½%– 1985/90	8,388,177	—	384,764	—	8,003,413
3,250,000	Stock	– 6% – Premium (20%) 1975	2,970,387	—	2,970,387	—	—
12,000,000	Stock	– 9% – 1992/95	10,936,872	—	626,505	—	10,310,367
5,500,000	Stock	– 13% – 1983/85	—	5,500,000	100,993	—	5,399,007
2,800,000	Stock	– 6% – Premium (20%) 1976	2,410,197	—	86,000	—	2,324,197
10,750,000	Stock	– 10% – Premium (20%) 1980	—	10,750,000	170,000	—	10,580,000
1,773,414	Project Finance	– British Banks/Suppliers	1,111,580	207,247	193,257	—	1,125,570
			133,618,918	16,457,247	15,241,416	—	134,834,749
	Foreign Currencies:						
30,000,000$	Revolving Credit	– Banking Syndicate 1980/84	13,337,766	—	—	2,705,015	16,042,781
40,000,000$	Revolving Credit	– Banking Syndicate 1978/82	10,416,667	6,281,148	—	4,692,560	21,390,375
30,000,000$	Revolving Credit	– Banking Syndicate 1978/80	—	14,524,328	—	1,518,453	16,042,781
14,500,000$	Project Finance	– International Bank for Reconstruction and Development 6½% – 1974/94	7,196,652	—	279,061	1,346,758	8,264,349
20,000,000$	Project Finance	– International Bank for Reconstruction and Development 7¼% – 1976/87	6,221,476	1,987,440	—	1,711,011	9,919,927
15,000,000$	Project Finance	– International Bank for Reconstruction and Development 7¼% – 1977/88	2,078,442	2,267,006	—	727,611	5,073,059
30,000,000$	Registered Notes	– Japanese Banks 7¾% – 1973/92	11,250,000	—	719,287	3,105,651	13,636,364
15,000,000 EUA	Registered Bonds	– Units of Account 8¼% – 1972/86	7,890,730	—	495,652	1,982,350	9,377,428
50,000,000 Sw. Fr.	Bearer Notes	– Swiss Banks 7% – 1980	8,230,453	—	—	2,301,406	10,531,859
1,338,080 Sw. Fr.	Project Finance	– Union Bank of Switzerland 6½% – 1975/81	220,260	—	35,247	56,572	241,585
1,000,000,000 B. Fr.	Registered Bonds	– Belgian Banks 7½%-1983	11,764,706	—	—	1,256,127	13,020,833
700,000,000 B. Fr.	Registered Bonds	– Belgian Banks 7½%-1983	8,235,294	—	—	879,289	9,114,583
1,000,000,000 B. Fr.	Registered Bonds	– Belgian Banks 8¾%-1980/89	11,764,706	—	—	1,256,127	13,020,833
132,742,895 F. Fr.	Project Finance	– French Banks	1,860,022	1,223,920	—	332,348	3,416,290
			100,467,174	26,283,842	1,529,247	23,871,278	149,093,047
	TOTAL		£234,086,092	£42,741,089	£16,770,663	£23,871,278	£283,927,796

Statement of Interest and Amortisation of Borrowings

Schedule H

1974/1975			1975/1976
£		£	£
	Interest on:		
	Advances from Minister for Finance	2,278,903	
	Other Irish pound and sterling borrowings (including stock management charges of £47,748)	6,696,350	
	Foreign currency borrowings	9,845,963	
		18,821,216	
	Less interest from temporary cash deposits	1,800,805	
13,545,652			17,020,411
	Amortisation of Borrowings:		
	Redemptions:		
	Minister for Finance	1,181,138	
	Others	5,353,604	
	Investments for sinking funds	3,571,807	
8,142,290			10,106,549
£21,687,942			£27,126,960
	Allocated as follows:		
	Interest:		
	Income and Expenditure Account	14,090,732	
	Trading Account	174,900	
	Fisheries	6,284	
	Capital Works	2,748,495	
13,545,652			17,020,411
	Amortisation:		
	Income and Expenditure Account	10,103,918	
	Fisheries	2,631	
8,142,290			10,106,549
£21,687,942			£27,126,960

Schedule I

Statement of Capital Reserves

	£	£	£
Non-Repayable Supply Contributions:			
Contributions from Minister for Finance under Electricity (Supply) Acts towards capital cost of supplying rural areas – as at 31st March, 1975	22,639,826		
Received in year	1,300,000	23,939,826	
Other contributions – as at 31st March, 1975	4,876,012		
Received in year	888,934	5,764,946	
			29,704,772
Repaid Capital Reserve:			
Amortisation of Borrowings, less write-off of intangible assets, adjustment for changes in currency parities and discounts on stock issues – as at 31st March, 1975		35,849,988	
Movements in year:			
Amortisation of Borrowings	10,415,785		
Adjustment for changes in currency parities	(23,871,278)	(13,455,493)	
			22,394,495
Total as at 31st March, 1976			**£52,099,267**

See Note 8, Schedule L re changes in currency parities.

Statement of Generation Costs

Schedule J

Generation	Fuel	Operation	Maintenance	Local Charges	WORKS COST 1975/1976	Per Unit Sent Out	WORKS COST 1974/1975	Per Unit Sent Out	Depreciation	TOTAL COST 1975/1976	TOTAL COST 1974/1975
	£	£	£	£	**£**	Pence	£	Pence	£	**£**	£
Coal/Oil											
Marina	3,747,059	461,636	415,692	93,585	**4,717,972**	1.143	4,482,475	1.162	269,929	**4,987,901**	4,768,088
Ringsend	9,682,329	945,321	847,895	160,720	**11,636,265**	1.145	8,619,683	1.242	638,772	**12,275,037**	9,253,678
Arigna	961,844	203,617	112,579	29,071	**1,307,111**	1.783	920,369	1.399	46,355	**1,353,466**	966,258
Great Island	6,826,082	418,976	903,543	134,863	**8,283,464**	1.009	9,611,895	0.896	713,918	**8,997,382**	10,319,542
Tarbert	6,314,411	421,267	346,669	88,026	**7,170,373**	0.901	6,489,858	0.908	433,917	**7,604,290**	6,916,655
Poolbeg	11,982,916	493,308	404,182	101,108	**12,981,514**	0.752	12,910,771	0.766	974,721	**13,956,235**	13,843,267
Sod Peat (Machine)											
Portarlington	1,317,519	369,674	271,342	52,895	**2,011,430**	1.373	1,291,859	1.021	78,631	**2,090,061**	1,369,520
Allenwood	1,070,262	381,254	344,237	62,268	**1,858,021**	1.383	1,584,730	0.929	119,208	**1,977,229**	1,702,645
Lanesborough	689,775	202,421	110,189	28,423	**1,030,808**	1.068	701,599	0.784	49,375	**1,080,183**	750,388
Milled Peat											
Ferbane	3,492,492	613,823	612,234	96,361	**4,814,910**	0.981	3,271,002	0.812	281,072	**5,095,982**	3 549,799
Rhode	2,076,507	436,113	489,682	78,103	**3,080,405**	0.921	2,227,108	0.760	221,685	**3,302,090**	2,447,057
Bellacorick	1,308,156	342,213	407,069	63,108	**2,120,546**	1.043	1,263,275	0.777	125,337	**2,245,883**	1,386,971
Shannonbridge	594,325	289,949	321,169	53,890	**1,259,333**	1.069	1,136,778	0.681	139,028	**1,398,361**	1,272,387
Lanesborough	1,363,193	202,421	132,715	29,863	**1,728,192**	0.664	957,681	0.568	136,151	**1,864,343**	1,092,682
Sod Peat (Hand-Won)											
Four 5MW Stations	442,949	276,764	125,246	39,204	**884,163**	2.729	574,881	2.489	68,795	**952,958**	642,924
Peak Station											
North Wall	825,226	222,731	115,865	45,650	**1,209,472**	—	1,140,761	—	126,068	**1,335,540**	1,265,825
Stand-by											
Pigeon House	—	138,542	58,753	33,269	**230,564***	—	511,286	—	82,271	**312,835***	593,396
Total – Fuel Stations	52,695,045	6,420,030	6,019,061	1,190,407	**66,324,543**	0.985	57,696,011	0.917	4,505,233	**70,829,776**	62,141,082
Hydro											
Shannon	—	213,248	329,517	79,780	**622,545**	0.270	579,910	0.173	139,799	**762,344**	717,723
Erne	—	128,940	154,107	42,760	**325,807**	0.199	275,132	0.108	199,478	**525,285**	473,021
Liffey	—	26,743	64,457	15,073	**106,273**	0.392	87,339	0.286	48,662	**154,935**	135,615
Lee	—	66,699	78,861	23,410	**168,970**	0.311	141,535	0.202	124,453	**293,423**	264,990
Clady	—	18,306	18,718	3,758	**40,782**	0.300	39,650	0.270	27,339	**68,121**	66,787
Pumped Storage											
Turlough Hill	—	138,688	144,324	46,633	**329,645**	—	225,493	—	576,516	**906,161**	770,172
Total– Hydro Stations	—	592,624	789,984	211,414	**1,594,022**	0.432	1,349,059	0.218	1,116,247	**2,710,269**	2,428,308
Total – All Stations	52,695,045	7,012,654	6,809,045	1,401,821	**67,918,565**	0.956	59,045,070	0.854	5,621,480	**73,540,045**	64,569,390

*Retired during year

Electricity Purchased in bulk (net)	**422,184**	156,777
Central Transport and Stores	**25,626**	32,973
General Charges	**3,492,974**	3,215,705
Fisheries (Net Cost)	**178,387**	155,025
TOTAL COST	**£77,659,216**	£68,129,870

Schedule K

Fisheries—Commercial and Conservation Operations

Total Cost 1974/75 £		£	Total Cost 1975/76 £	Analysis of Commercial and Conservation Operations: Commercial £	Conservation £
205,004	*Direct Costs		**244,866**	98,987	145,879
	Overheads and General Charges:				
40,809	Payroll expenses and charges	53,060		15,859	37,201
7,000	Depreciation	7,000		3,441	3,559
8,917	Interest and Amortisation of Borrowings	8,915	**68,975**	3,896	5,019
261,730			**313,841**	122,183	191,658
	Less:				
106,705	Sales of fish, letting of fishing rights and miscellaneous income		**135,454**	126,068	9,386
£155,025	**Net Cost as per Electricity Income and Expenditure Account**		**£178,387**	£(3,885)	£182,272

*Commercial costs include £8,366 for experimental work on salmon rearing and eel fisheries (1974/75 - £6,637).

NOTES ON AND FORMING PART OF THE FINANCIAL ACCOUNTS AND SCHEDULES

Schedule L

The Accounts are prepared in accordance with the Electricity (Supply) Acts. Section 21 (2) of the 1927 Act reads:

"All charges made by the Board after the appointed day for electricity (whether derived from the Shannon works or otherwise) sold by it in bulk or direct to consumers and for goods sold and services rendered by it shall be fixed at such rates and on such scales that the revenue derived in any year by the Board from such sales and services together with its revenue (if any) in such year from other sources will be sufficient and only sufficient (as nearly as may be) to pay all salaries, working expenses and other outgoings of the Board properly chargeable to income in that year (including the payments falling to be made in such year by the Board to the Minister for Finance in respect of interest and sinking fund payments on advances out of the Central Fund) and such sums as the Board may think proper to set aside in that year for reserve fund, extensions, renewals, depreciation, loans and other like purposes".

Accounting Policies

1. **Capital Assets:**
   Capital Assets are valued at cost. Cost includes prime cost, overheads and interest costs during construction.

2. **Depreciation of Capital Assets:**
   Assets are grouped and allotted lifespans in line with international practice. Depreciation is provided on the straight line method on all assets in commission on 1st April each year (other than on new generation stations) even where they have exceeded their allotted lifespans. In the case of new generation stations depreciation commences from the date of commissioning if prior to 31st December.
   Assets when retired from service are charged against, and proceeds of disposal or stores value are credited to, Accumulated Depreciation.

3. **Materials:**
   Stocks of materials and fuel are valued at average cost.

4. **Repayable Work-in-Progress:**
   Installations Contracts are valued at direct cost together with appropriate overheads; sundry works at direct cost.

5. **Accounts Receivable:**
   The figure for Accounts Receivable in the Statement of Current Assets and Current Liabilities is net of a provision for doubtful debts, considered adequate in relation to the size and nature of the business. Bad debts are written off as they arise.

6. **Amortisation of Borrowings:**
   Long Term Borrowings and Stock Issues – Amortisation is in line with the contractual agreements.
   Medium and Short Term Borrowings – these are repaid in accordance with the contractual agreements but amortisation is provided on a 15/20 year basis.
   Where Borrowings are drawndown for a period in excess of six months, revenue is charged with proportionate amortisation.

7. **Capital Borrowings:**
   The Statement of Borrowings includes borrowings initially contracted for a period in excess of twelve months, irrespective of phased repayment arrangements, and of the lapsed portion of repayment period.
   Discounts on Stock Issues have been charged against the Repaid Capital Reserve. Other borrowing costs are charged against Profit and Loss Account.

8. **Borrowings in Foreign Currencies:**
   Irish Pound Equivalent is at exchange rates ruling at year end to reflect significant changes in parities. Changes are reflected in the Capital Reserve.

9. **Non-Repayable Supply Contributions:**
   Non-Repayable Supply Contributions are credited to Capital Reserves (Schedule I) via the Profit and Loss Account (Account No. 1).

10. **Hire Purchase Transactions:**
    Profit on Hire Purchase sales is taken in the year of sale. Credit for interest is taken in equal instalments over the Hire Purchase term.

11. Apportionments:

(a) Capital Expenditure bears interest on the average value of (1) work-in-progress, (2) stocks held and (3) advances made to suppliers in respect of capital works, at the rates appropriate to the financing of individual projects, and a proportion of general overhead expenses calculated at a percentage rate on the prime cost of work paid for during the year.

(b) Appliance Sales, Installations Contracts and Fisheries bear their relevant proportion of general overhead expenses and interest.

(c) The proportion of Appliance Sales and Installations Contracts overhead expenses related to the promotion of sales of electricity is included in the overhead expenses charged to Electricity Income and Expenditure Account.

12. Taxation:

The Board is liable for Corporation Tax at the reduced rate specified in Section 79 of the Corporation Tax Act 1976. Because of large continuing capital expenditure, liability to tax will not arise in the foreseeable future and a tax equalisation reserve is not deemed necessary (unutilised capital allowances at 31st March, 1976 are estimated at £100m.). Had a Tax Equalisation Reserve been provided, the accumulated figure would now be an estimated £15.1m.

13. Exceptional Expenditure:

Essential maintenance and repairs are charged to the Electricity Income and Expenditure Account in the year in which the liability arises, on an estimated basis if necessary. Costs incurred to improve system efficiency are charged to the Electricity Income and Expenditure Account over the number of years corresponding to the benefits secured; similar treatment is applied to the revenue element of lump sum payments to achieve future benefits under productivity agreements.

14. Accounting Year:

From 1975/76 Income and Expenditure are aligned on a 52 or 53 week year as appropriate. The year 1975/76 is a 53 week year.

Auditors' Report

As Auditors appointed by the Minister for Transport and Power, with the consent of the Minister for Finance, we have examined the Profit and Loss Account, Balance Sheet and attached Schedules A to L of the Electricity Supply Board.

We have obtained all the information and explanations which we considered necessary for the Audit and the Financial Statements are in agreement with the books of account.

In our opinion:—

(a) Proper books of account have been kept and proper Returns have been received from offices not visited by us.

(b) The Profit and Loss Account and Balance Sheet when read in conjunction with the attached Schedules and the Notes appearing thereon give a true and fair view of the results of the Board for the year ended 31st March 1976 and of the state of the Board's affairs as at that date.

STOKES KENNEDY CROWLEY & CO.
Chartered Accountants

Harcourt House,
Harcourt Street,
Dublin 2.

9th July, 1976

Appendices

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Appendix 1

Number of Customers and Electricity Sales

District	No. of Customers at 31st March		Electricity Sales Units sold in year ended 31st March	
	1976	1975	1976 (millions)	1975 (millions)
Athlone	52,369	50,798	224.9	214.7
Cork	104,816	101,637	780.4	756.4
Dublin City	138,645	137,517	1,068.8	1,090.8
Dublin North West	101,451	94,656	805.7	809.3
Dublin South	59,045	57,037	415.5	424.6
Dundalk	72,045	69,738	528.7	519.4
Galway	53,106	50,982	269.1	265.4
Limerick	84,855	82,368	673.6	666.7
Portlaoise	62,585	60,481	391.4	378.3
Sligo	84,210	81,700	300.9	282.2
Tralee	44,247	42,693	203.9	196.1
Waterford	74,095	71,393	596.1	549.2
Total	931,469	901,000	6,259.0	6,153.1

Growth of Electricity Sales and Number of Customers

Appendix 2

Year Ended 31st March	Units Generated (and Purchased)* Millions	Units Sold to Customers Millions	Revenue from Electricity Sales Thousands	Average Price per Unit Sold Pence	Total Customers
			£		
1930	60.9	43.2	478	1.108	48,606
1935	206.1	157.0	1,258	0.800	103,037
1940	407.0	318.6	1,946	0.612	172,545
1945	406.3	319.0	2,458	0.771	228,008
1950	784.8	626.2	4,774	0.763	310,639
1955	1,461.7	1,192.2	9,522	0.800	461,901
1960	2,096.0	1,692.2	14,724	0.871	610,946
1965	3,240.2	2,682.6	22,488	0.838	697,491
1966	3,546.2	2,953.3	24,077	0.817	716,113
1967	3,851.0	3,238.1	26,690	0.825	726,561
1968	4,246.4	3,570.1	29,898	0.838	745,430
1969	4,749.0	4,012.3	34,457	0.858	765,213
1970	5,245.7	4,411.6	39,400	0.892	786,500
1971	5,921.0	4,862.1	44,082	0.907	805,736
1972	6,234.2	5,271.7	51,750	0.982	818,516
1973	6,749.1	5,705.1	60,321	1.057	845,119
1974	7,253.1	6,152.0	73,063	1.188	873,764
1975	7,298.7	6,153.1	111,261	1.808	901,000
1976	7,534.6	6,259.0	136,277	2.177	931,469

The above table shows, quinquennially from 1930 to 1965, and for each year since, the number of units generated and sold, the revenue, the average price per unit, and the number of customers.

*Excluding units absorbed by storage pumping.

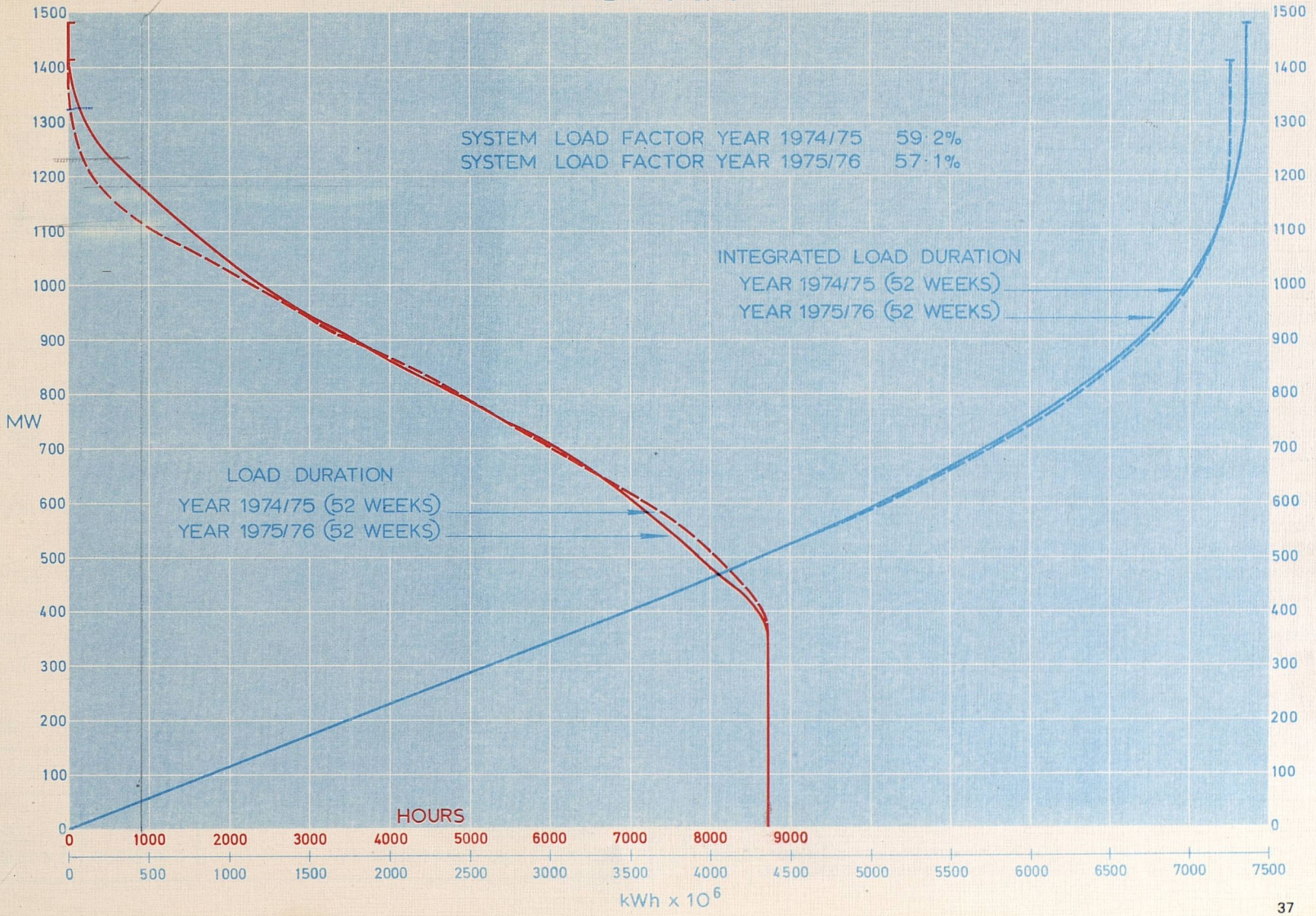
Appendix 3

Analysis of Units Sold

Class of Supply	Year ended 31st March 1976 (Millions)	Year ended 31st March 1975 (Millions)	Increase (Millions)	Percentage Increase
DOMESTIC				
General Supply	2,496.3	2,393.0	103.3	4.3
Night Space Heating	209.7	256.5	– 46.8	– 18.2
	2,706.0	2,649.5	56.5	2.1
COMMERCIAL				
Lighting	233.4	241.9	– 8.5	– 3.5
Heating, Cooking and Waterheating	316.2	319.3	– 3.1	– 1.0
Motive Power	226.3	223.8	2.5	1.1
Night Space Heating	203.6	218.7	– 15.1	– 6.9
Public Lighting	84.5	75.8	8.7	11.5
Maximum Demand	32.9*	—	32.9	—
Miscellaneous	212.0	198.7	13.3	6.7
	1,308.9	1,278.2	30.7	2.4
INDUSTRIAL				
Maximum Demand	2,095.8	2,070.9	24.9	1.2
Lighting	15.5	14.1	1.4	9.9
Heating, Cooking and Waterheating	31.1	33.1	– 2.0	– 6.0
Motive Power	91.8	96.7	– 4.9	– 5.1
Night Space Heating	9.9	10.6	– 0.7	– 6.6
	2,244.1	2,225.4	18.7	0.8
TOTAL	6,259.0	6,153.1	105.9	1.7

*Some of the consumption shown under Maximum Demand (Commercial) was recorded in previous years under other headings, mainly lighting.

SYSTEM LOAD DURATION AND INTEGRATED LOAD DURATION CURVES
YEAR 1975/76



Appendix 5

Generation Statistics for the Year 1975/76

Station	Year 1975/76			Year 1974/75	Station	Year 1975/76			Year 1974/75
	Generated Million Units	Station Use Million Units	Sent Out Million Units	Sent Out Million Units		Generated Million Units	Station Use Million Units	Sent Out Million Units	Sent Out Million Units
Ardnacrusha	232.6	2.3	230.3	336.0	Screeb	3.8	0.4	3.4	1.3
Cliff	47.7	0.8	46.9	72.8	Gweedore	16.0	1.6	14.4	13.8
Cathaleen's Fall	118.6	1.6	117.0	182.7					
Carrigadrohid	15.3	0.4	14.9	19.2	Poolbeg	1,800.9	75.3	1,725.6	1,684.4
Inniscarra	40.1	0.7	39.4	50.7	Pigeon House	—	0.9	– 0.9	6.6
Pollaphuca	14.3	0.8	13.5	14.6	North Wall	76.8	5.6	71.2	65.9
Golden Falls	5.6	0.1	5.5	6.1	Ringsend	1,078.9	62.8	1,016.1	693.9
Leixlip	8.3	0.2	8.1	9.8	Marina	434.3	21.7	412.6	385.6
Clady	13.8	0.2	13.6	14.7	Great Island	866.4	45.5	820.9	1,072.8
					Tarbert	831.7	35.6	796.1	714.5
Ferbane	532.0	41.1	490.9	402.6	Arigna	79.0	5.7	73.3	65.8
Rhode	360.2	25.8	334.4	293.1					
Bellacorick	218.9	15.6	203.3	162.5	Turlough Hill				
Shannonbridge	126.7	8.9	117.8	166.9	(generation)	234.1	3.3	230.8	229.6
Lanesboro	378.8	21.9	356.9	258.2	Turlough Hill (pumping)	350.8	—	350.8	317.0
Portarlington	157.4	10.9	146.5	126.5	E.S.B. Import	68.8	—	68.8	70.3
Allenwood	141.9	7.6	134.3	170.6	E.S.B. Export	37.5	—	37.5	71.7
Cahirciveen	13.5	1.3	12.2	7.4					
Milltown Malbay	2.9	0.5	2.4	0.6	Purchased	3.6	—	3.6	2.9
					System Demand	7,534.6	399.1	7,135.5	6,913.7
					Maximum daily Generation Million Units			28.1	27.5
					Maximum load Generated in kW			1,478,000	1,443,000

These generation statistics are for a 53 week accounting year.

Note: System demand is total units generated by all Stations including Turlough Hill plus E.S.B. Import and units purchased, less Turlough Hill pumping and E.S.B. Export.

Particulars and Performance of Generating Plant

Appendix 6

Hydro Stations

Station	Location	Average annual generation million units	Plant Particulars		Plant Performance for year ended 31/3/'76		
			Generating Sets		Units sent out millions	Plant load factor %	Works cost per unit sent out (pence)
			No.	Capacity (MW)			
Ardnacrusha	Shannon	310	4	85	230.3	30.7	0.270
Pollaphuca	Liffey	45	2	30	27.1	5.4	0.392
Golden Falls			1	4		15.7	
Leixlip			1	4		23.3	
Cliff	Erne	275	2	20	163.9	26.8	0.199
Cathaleen's Fall			2	45		29.6	
Carrigadrohid	Lee	77	1	8	54.3	21.5	0.311
Inniscarra			2	19		23.7	
Clady	Clady	13	1	4	13.6	38.7	0.300
Turlough Hill – Pumped Storage	Co. Wicklow	—	4	292	230.8	—	—

Appendix 6 contd.

Particulars and Performance of Generating Plant

Steam Stations

Station	Location	Plant Particulars					Plant Performance for year ended 31/3/'76			
		Generating Sets		Boilers			Units sent out millions	Plant load factor %	Fuel cost per unit sent out (pence)	Works cost per unit sent out (pence)
		No.	Total Capacity MW	No.	Total Capacity Tonne/hour	Fuel Type				
Arigna	Co. Roscommon	1	15	1	75	Coal	73.3	59.2	1.311	1.783
Lanesborough	Co. Longford	2	60	1 1	100 173	Sod Peat Milled Peat	96.5 260.4	56.9 77.9	0.715 0.523	1.068 0.664
Rhode	Co. Offaly	3	80	3	364	Milled Peat	334.4	50.6	0.621	0.921
Bellacorick	Co. Mayo	2	40	2	191	Milled Peat	203.3	61.5	0.643	1.043
Shannonbridge Shannonbridge (under construction)	Co. Offaly	1 1	40 40 80	1 1	173 173	Milled Peat Milled Peat	117.8	35.6	0.505	1.069
Great Island	Co. Wexford	3	240	3	853	Oil	820.9	40.5	0.832	1.009
Tarbert Tarbert (under construction)	Co. Kerry	2 2	120 500 620	2 2	473 1600	Oil Oil	796.1	77.8	0.793	0.901
Poolbeg	Dublin City	2	240	2	760	Oil	1,725.6	75.5	0.694	0.752
		2	28	Gas Turbine Sets						

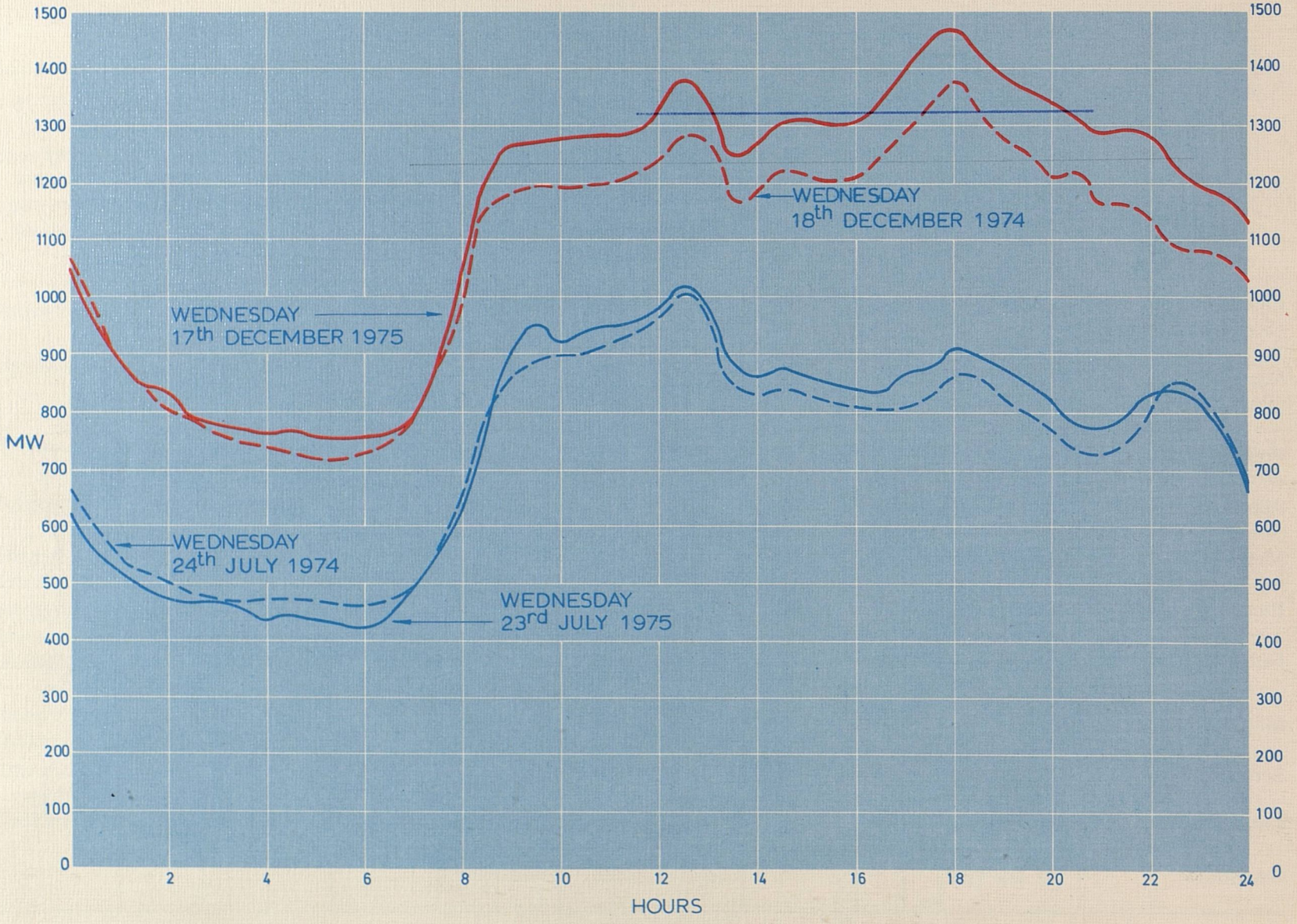
Particulars and Performance of Generating Plant **Appendix 6 contd.**

Steam Stations

Station	Location	Plant Particulars					Plant Performance for year ended 31/3/'76			
		Generating Sets		Boilers			Units sent out millions	Plant load factor %	Fuel cost per unit sent out (pence)	Works cost per unit sent out (pence)
		No.	Total Capacity MW	No.	Total Capacity Tonne/hour	Fuel Type				
Pigeon House (Stand-by Station)	Dublin City	5	90	8	364	Oil	– 0.9	—	—	—
North Wall (Peak Station)	Dublin City	3	48	3	225	Oil	71.2	18.0	—	—
Portarlington	Co. Laoise	3	37.5	3	205	Sod Peat	146.5	47.1	0.900	1.373
Allenwood	Co. Kildare	2	40	4	273	Sod Peat	134.3	39.8	0.797	1.383
Marina	Cork City	3	120	4	522	Oil	412.6	40.6	0.908	1.143
Ringsend	Dublin City	6	270	7	1114	Oil	1,016.1	44.9	0.953	1.145
Ferbane	Co. Offaly	4	90	4	430	Milled Peat	490.9	66.4	0.711	0.981
Miltown-Malbay	Co. Clare	1	5	1	28	Sod Peat	32.4	20.3	1.369	2.729
Screeb	Co. Galway	1	5	1	28	Sod Peat				
Cahirciveen	Co. Kerry	1	5	1	28	Sod Peat				
Gweedore	Co. Donegal	1	5	1	28	Sod Peat				

Appendix 7

SYSTEM DAILY LOAD CURVES YEAR 1975/76



Transmission System at 31st March, 1976

Transmission Stations

Transformer/Switching Stations	No. in commission	Increase for year	Total capacity in kVA	Increase or decrease in capacity for year in kVA
220 kV Stations	10	Nil	600,000 at 275/220 kV	Nil
			2,253,000 at 220/110 kV	+563,000
			420,000 at 13/220 kV	Nil
			397,000 at 10/220 kV	Nil
			310,000 at 10/110 kV	Nil
			20,000 at 110/ 6 kV	Nil
110 kV Stations	65	1	2,642,500 at 110/ 38 kV	+ 45,000
			59,000 at 110/ 10 kV	Nil
			60,000 at 110/ 6 kV	Nil
			110,400 at 38/ 10 kV	Nil
			1,151,000 at 10/110 kV	Nil
			88,000 at 10/38/110 kV	Nil
			5,000 at 10/ 38 kV	Nil

Transmission Lines and Cables

Lines and Cables	Length kms.	Increase or decrease for year kms.	Description
275 kV lines	10.5	Nil	6 x twin 485 sq. mm. double circuit SCA
220 kV lines	25.1	Nil	6 x 600 sq. mm. double circuit SCA
220 kV lines	544.8	+70.5	3 x 600 sq. mm. single circuit SCA
220 kV lines	276.8	Nil	3 x 425 sq. mm. single circuit SCA
220 kV lines	3.9	Nil	3 x 425 sq. mm. twin, SCA
110 kV lines	1.8	–5.6	6 x 95 sq. mm. double circuit copper
110 kV lines	227.3	–145.0	3 x 95 sq. mm. single circuit copper
110 kV lines	98.9	+2.3	6 x 200 and 6 x 300 sq. mm. double circuit SCA
110 kV lines	2872.0	+25.8	3 x 200 to 3 x 425 sq. mm. single circuit SCA
220 kV cables	30.6	Nil	3 single core oil filled
110 kV cables	22.5	+0.6	3 single core oil filled
110 kV cables	17.9	Nil	3 core oil filled
110 kV cables	25.6	Nil	3 core pipe compression

Appendix 9

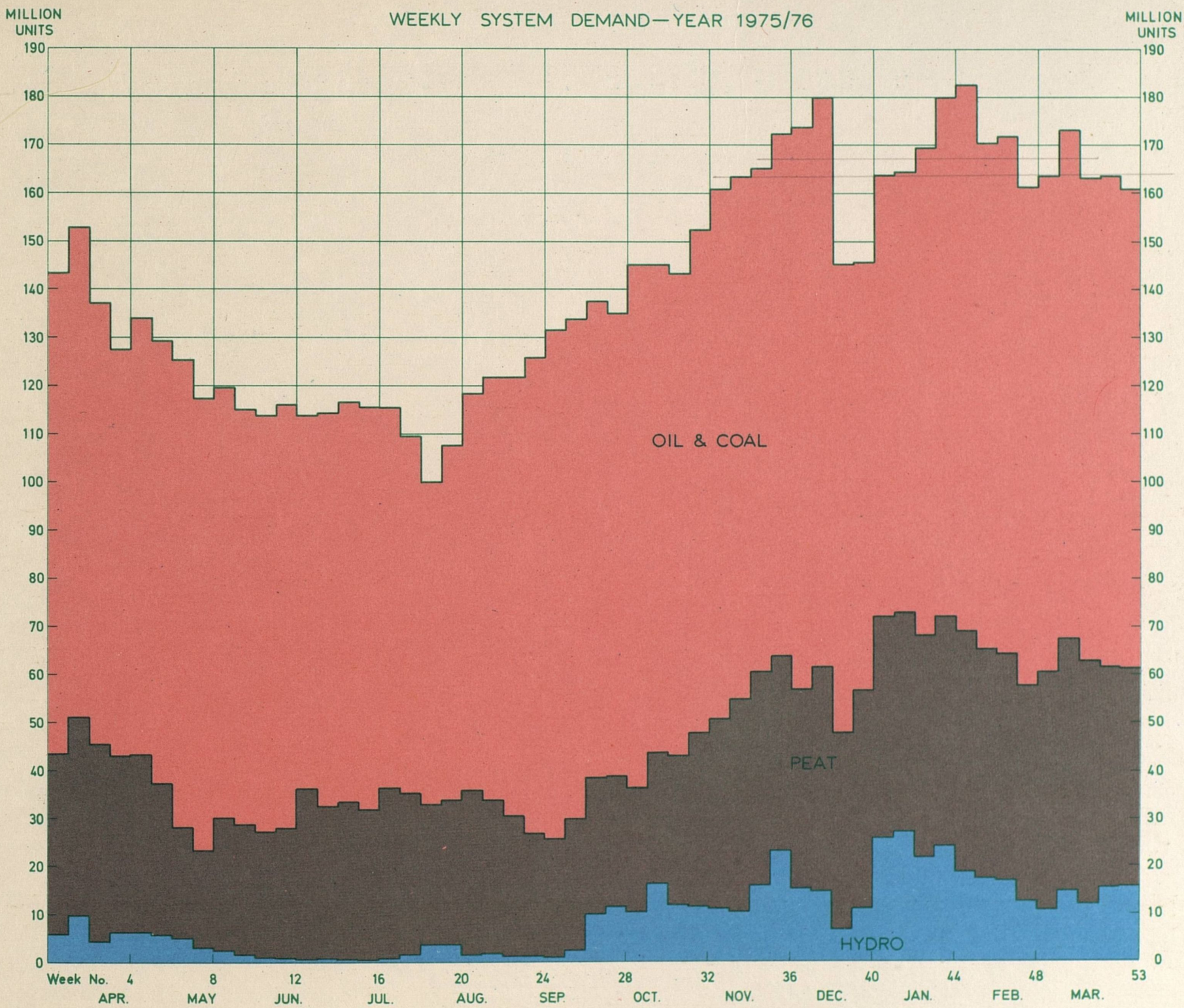
Distribution System at 31st March, 1976

Distribution System (Excluding Rural Networks)

Transformer Stations	No. in commission	Increase (+) or Decrease (—) for year	Total Capacity in kVA	Increase (+) or decrease (—) for year in kVA
38kV Stations	323	+7	2,159,700	+ 62,000
10kV Stations (excl. U.R.D.)	8,801	+644	1,951,454	+93,424
10kV Stations U.R.D.	1,670	+64	95,174	+3,845
5kV Stations	53	Nil	32,590	Nil

Distribution lines and cables	Length kM	Increase (+) or Decrease (—) for year kM	Description
38kV Lines	5,000.0	+115.5	3 x 25 to 3 x 300 sq. mm. Cu. and SCA.
38kV Cables	246.7	+4.9	3 x 95 to 3 x 680 sq. mm. copper and aluminium
10kV Lines	6,393.8	+75.5	Single and three phase
10kV and 5kV Cables	2,240.0	+112.5	2 x 16 to 3 x 240 sq. mm. copper and aluminium
3.3kV Cables	3.7	Nil	3 x 185 sq. mm.

WEEKLY SYSTEM DEMAND—YEAR 1975/76



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