

ESB

Bord Solathair an Leictreachais

Electricity Supply Board
Fifty Ninth Annual Report
for year ended 31st March 1986

P.L.4166

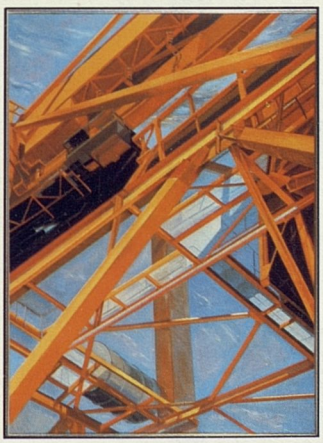
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Cover picture: John Keating captures the power and majesty of Moneypoint in oils.

Tá leagan Gaeilge den Tuarascáil seo le fáil, ach é a iarraidh.

ESB INPUT TO IRELAND'S ECONOMY

	1982/83 £ millions	1983/84 £ millions	1984/85 £ millions	1985/86 £ millions
Fuel: Natural Gas, Peat, Oil, Native Coal	150	199	201	188
Irish Suppliers of Goods and Services including Capital Work	115	111	120	97
Government Tax on Oil	10	9	9	11
Rates Levy and Local Rates	17	23	25	26
Payroll Costs including Capital Projects	186	194	203	209
Interest paid to Irish Lenders & Stockholders	27	34	39	50
TOTAL	505	570	597	581

DATA SUMMARY

	1985/86	1984/85
FINANCIAL		
Financial Outcome. Surplus/(Deficit)	£(8)m	£(27)m
Income	£790m	£727m
Assets in Commission (before Depreciation)	£1,556m	£1,121m
Sales (Million Units)	9,788	9,274
Effective Generating Capacity (MW)	3,547	3,247
Peak Load (MW)	2,130	2,092
Customers	1,194,765	1,168,679
EMPLOYMENT		
Total Employment	12,114	12,454
Operations	*9,193*	*9,110*
New Works	*2,345*	*2,642*
Consultancy and Secondment	*218*	*250*
Apprentices	*358*	*452*
Pay	£170.5m	£169m
ESB Contribution to Pension Fund, PRSI and Expenses	£38m	£35m



Board Members at the May 1986 meeting. Standing (from left) Joseph LaCumbre, Colm McCarthy, Seamus Conerney, Noel O'Hara, Kevin Lynch, Willie Cremins. Seated: Betty Dillon, Patrick J. Moriarty (Chief Executive), Professor C.T.G. Dillon (Chairman), John F. Williams (Secretary), Patrick Kevans.

ESB
Bord Soláthair an Leictreachais

Report and Accounts for year ended 31st March 1986

Board Members
PROFESSOR C.T.G. DILLON, M.E., C.Eng., F.I.E.I., F.I.E.E., F.I.Mech.E., **Chairman**
S. CONERNEY
W. CREMINS
BETTY DILLON
PATRICK J. KEVANS, Solicitor
J. LaCUMBRE
K. LYNCH, Dip.Eng.(Mech.), M.I.E., C.Eng., M.I.E.I.
C. McCARTHY, B.Comm., M.Econ.Sc.
P.J. MORIARTY, F.Mgt.I., F.C.I.S., F.I.P.M., **Chief Executive**
N.S. O'HARA, B.E., M.I.E., C.Eng., M.I.E.I.

Directors
Strategic Planning and Development T.V. FAHY, B.E., F.I.P.M.
Customer Operations C. McCABE, B.E., C.Eng., F.I.E.I.
Generation and Transmission Operations A.G. KELLY, B.E., Ph.D., F.I.Mech.E., Mem.A.S.M.E., F.I.E.I.
Corporate Services F.A. MALIN, A.C.I.S.
Finance M.D. CONNAUGHTON, B. Comm.

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

Electricity Supply Board,
Lower Fitzwilliam Street, Dublin 2, Ireland.
Telephone: Dublin 765831 and 771821.
Telex: Dublin 25313

To the Tanaiste and Minister for Energy

In accordance with the provisions of the Electricity Supply Acts 1927/1985 the Board presents its Annual Report and Accounts for the year ended 31st March 1986. Like last year an Interim Report and Accounts were submitted covering the six months to 30th September 1985.

REVIEW OF YEAR

Financial

It was a good year. Sales of electricity were 5.5% up on last year. Oil prices fell dramatically in the last quarter. Exchange rates and interest rates moved in our favour. We kept internal cost increases below the level of inflation. There was a modest price increase for domestic customers from January 1986. All these contributed to the achievement of near break-even for the year, i.e. a deficit of £7.7 million in a total income of £790m. This is satisfactory when, at the start of the year, we were forecasting a deficit of £26 million on the basis of prices, costs and trends foreseen then. No amount has been included in the accounts in respect of an outstanding consequential loss claim against the Board's Insurers; if settlement of this claim had been reached before year-end the financial outcome for the year could have been substantially better. In March 1986, when we could foresee price reductions in fuel for the year ahead, the Board approved price reductions for all classes of customer after consultation with the Department of Energy.

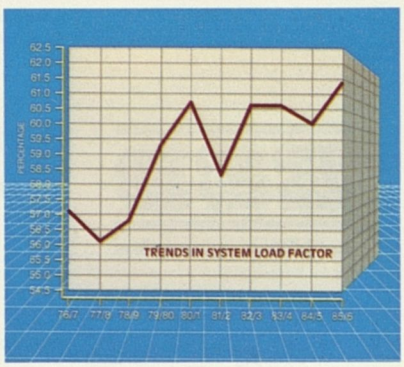
The Board is committed to further price reductions through actions to reduce all the costs which make up the price charged to the customer. The desire to reduce prices quickly must, however, be tempered by the need to eliminate the accumulated deficit which, at year-end, stands at £72 million. This deficit has to be financed by foreign borrowings at a cost of about £8 million a year. The Board's policy is to stay financially sound judged by the strictest commercial standards and without any taxpayer subsidy. It derives from that policy that the deficit must be recovered quickly. The Board considers that a recovery period of three to five years would be reasonable to permit some further price reductions if costs remain favourable. Long-term financial stability, in the Board's view, makes it necessary for it to resist the temptation to give away immediately all the savings from reduced fuel prices which may turn out to be only temporary. It would be different if a large deficit of £72 million had not been allowed to build up through reluctance to apply timely price increases in the era of rapidly rising costs and increasing fuel prices in the seventies and early eighties.

Electricity Supply

Despite the most careful operation and maintenance unexpected faults occur which shut down major plant. This happened last year in Aghada, Poolbeg and North Wall. Power cuts were avoided because there is surplus plant. There will, however, be a growing risk in the coming years as the surplus is absorbed by increasing sales. Other electricity companies have the security of strong interconnections which Ireland does not have. There were no problems on the Transmission System. As the modernisation of a nation progresses the demands on the electricity supplier increase. Growth in industry, commerce and services and rising living standards bring the expectation of perfect continuity of supply and uniform standards of voltage and frequency. The ESB distribution system extends all over the country through 130,000 kilometres of line. Keeping it in good shape is a big task. As well as a planned programme of maintenance, there is an investment programme in new equipment and replacement. These programmes are phased to achieve, on a priority basis, an electricity service nationwide up to the best international standards. Good progress was maintained on these programmes during the year.

The number of new houses connected was 24,337, a marginal increase on the previous year. There was a slight shift between urban (up 5%) and rural (down 6%).

Except for short local outages due to snow, wind and thunderstorms there were no extensive or prolonged power-cuts during the year.



Graph 1

Marketing

The Board knows that its product, electricity, is a premium energy with unique characteristics which can improve efficiency and productivity in industry, commerce, agriculture and services as well as promote economy and quality of life in domestic households. Electricity is marketed with confidence and with an emphasis on service to the customer. The concept of customer service ranges from the search for new uses, new appliances, new processes to the routine day-to-day response to the needs of each customer.

During the year there were many different marketing promotions and staff training workshops throughout the country. The objectives of it all are to serve the country well and to achieve electricity sales growth and load management which will contribute best to the long-term stability of electricity prices.

The Board is pleased to record the continued success of its marketing strategy. In the past three years total sales have increased by 15% but peak demand has increased by only 11%. Load factor improved to 61% last year compared with 60% the previous year and 57% ten years ago (Graph 1).

The sales growth in the past year was 5.5% but growth varied between the three main sectors. It was 5.4% in households, 4.3% in industry and 7.7% in commerce.

ESB Shops

The ESB opened shops in its formative years to promote electricity through offering electrical appliances for sale throughout the country where they were previously unknown. It was a profitable business for many years, but it had substantial losses in recent years. This was due to a combination of keener competition from an expanded private sector, increased ESB costs, slow adaptation to changed market conditions and a perceived responsibility to cater for the sparsely populated areas which private enterprise would not service with sales and after sales service.

Two years ago the Board decided that while a chain of shops selling appliances could be an effective support for electricity marketing, they could be justified in the present day only if they operated profitably by normal commercial standards. A three-year target was set to return to profitability. The Board is pleased to record the early signs of good results from its rationalisation and modernisation programme. Sales last year increased by £2.9m or 30% and volume increased by 25%. Net losses decreased from £0.9m to £0.5m. A profit is expected by this time next year.

Analysis of Units Sold

Class of Supply	Year ended 31st March 1986 Millions	Year ended 31st March 1985 Millions	Increase Millions	% Increase
DOMESTIC				
General Supply	3,842.3	3,656.3	186.0	5.1
Night Rate	159.0	138.8	20.2	14.6
	4,001.3	3,795.1	206.2	5.4
COMMERCIAL				
Lighting and Motive Power	629.8	559.8	70.0	12.5*
Heating, Cooking and Waterheating	372.9	351.6	21.3	6.1
Night Space Heating	185.4	175.8	9.6	5.5
Public Lighting	129.7	126.3	3.4	2.7
Maximum Demand	752.8	680.5	72.3	10.6
Miscellaneous	163.1	180.4	– 17.3	– 9.6*
	2,233.7	2,074.4	159.3	7.7
INDUSTRIAL				
Maximum Demand				
High Tension	2,682.5	2,543.1	139.4	5.5
Low Tension	747.6	744.4	3.2	0.4
Miscellaneous	122.7	117.2	5.5	4.7
	3,552.8	3,404.7	148.1	4.3
TOTAL	9,787.8	9,274.2	513.6	5.5

* Some of the consumption now recorded under Lighting & Motive Power was previously recorded under Miscellaneous.



Aerial view of Inishmore and below the generator house from which the Island's 325 electricity customers are supplied.



Major Projects

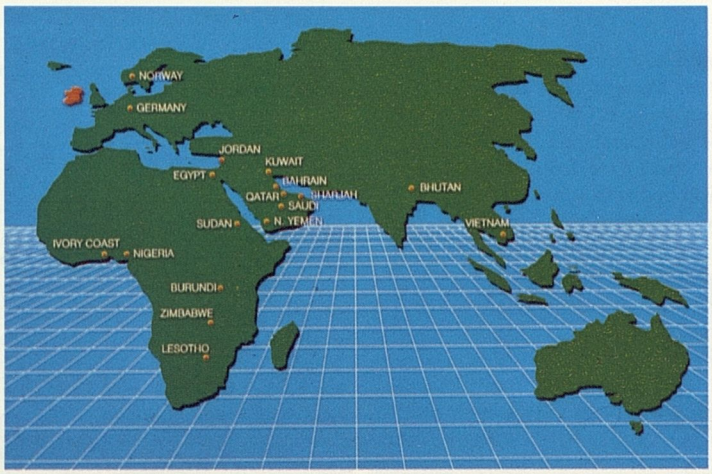
Moneypoint station and the 400kV transmission system associated with it are moving towards completion. They are on time and within budgets. One transmission line from Moneypoint to Woodland in County Meath has been commissioned with its transformer stations at each end. The first unit using coal went into commercial operation last January. Commercial operation of the remaining two units is scheduled for 1986 and 1987.

The completion of Moneypoint next year will be a milestone in the Board's strategy to be independent of any one fuel for electricity generation. The ESB will be better off than ever before as regards the mixture of fuels it can use. Depending on supplies and prices generation of electricity can be switched between coal, oil or gas. This is a big improvement on the position in 1973 when there was total dependence on oil for over 70% of output. The Board is satisfied that the strategy of fuel flexibility which it has implemented is the only sensible one for times of great uncertainty.

Employee Relations

During the year an agreement was negotiated with ESB trade unions on a structure of local and national participation councils made up of trade union officials, staff and management representatives. The Board wishes to congratulate all concerned with the conclusion of the agreement and it sincerely hopes that it heralds a new cooperative era of employee relations.

The Board remains committed to the view that the cause of industrial peace in so vital an industry as electricity is best served by free collective bargaining between its management and the Trade Unions. As far as the Board is concerned the ESB Industrial Council is the most significant institution for the resolution of disputes which cannot be resolved in negotiation. The Council has had Mr. Con. Murphy, Rights Commissioner, as its Chairman since its inauguration in 1970. He is now joined as co-Chairman by Mr. Maurice Cosgrave, former Chairman of the Labour Court.



The scope of ESB consultancy activities worldwide

The Board thanks them both for their hard work, judgement and patience in the cause of industrial peace in our vital industry.

The Board approved the broad framework of the second phase of the reorganisation plan. The detailed changes are progressing in an agreed process of negotiation and consultation.

The Board regrets that a six-month unofficial strike by line crews in Cork deprived customers in that city of electricity supply in the early weeks of the strike.

Information Technology

There are upwards of 200 specialists of different disciplines and experience now working full-time in the ESB in applying the newest and best of information technology to the managerial, operational, accounting and customer needs of the business. New developments are taking place in all areas of ESB business with the objectives of providing continuously high quality customer service and of achieving efficiency and economy throughout its activities.

During the year particularly notable advances were made with the implementation of new information systems in the management of Customer Service, Generating Station maintenance and Distribution control.

With these systems, and other developments, the ESB is very much among the most advanced electricity companies in this field. For this the Board is very much indebted to its staff for their enthusiasm for technological change throughout the company.

External Activities

Foreign consultancy work was started in 1976 and the business has grown steadily to £12.8m for the year ending 31st March 1986. It now employs 218 people.

While the level of activity was good, profit was minimal. This is the first time, since 1976, that profits fell sharply. There are two reasons - the fall in oil revenues in the Middle East, with intense competition, caused fees not to keep pace with inflation and the improvement in exchange rates reduced turnover when converted to Irish currency.

The competition for work is very intense and the ESB is trying to survive against the biggest consulting firms in the world who enjoy considerable financial and diplomatic help from their governments. Nevertheless the Board sees worldwide opportunities to expand external activities. It feels that it has a duty to create wealth and worthwhile jobs for young, educated school leavers. To exploit opportunities and to have, in the ESB, a climate of enterprise for international business, the Board urgently needs powers to set up subsidiary companies. The Board hopes that the necessary minor amendment to ESB Acts will be introduced soon to give it these powers.

Staff

An analysis of ESB staff numbers engaged on the different activities is given on page 2. With the need to redeploy surplus staff, particularly those coming free from major construction projects, there are only very limited opportunities for the recruitment of staff. Recruitment during the year was confined to essential replacements of engineers, craftsmen and clerical staff.

The Board has the highest regard for all its staff and, for this reason, it has always had a progressive personnel policy. Trade unions and staff have responded to this by being committed to providing a first-class service to the community. Perfection does not exist in this world and it is natural that there is the occasional hiccup of conflict. They are rare nowadays in the ESB. The team spirit of staff and their identification with the Board's public service mission are evident in many ways. A few examples are: company-wide social, cultural and sporting activities, a corporate notion of serving the nation, close liaison with community and charitable groups, cooperation with reorganisation, support for external activities and low absenteeism.

The Board wishes to thank each member of the staff and the trade union officials who represent them for the contribution which each one of them has made to making the ESB a company about which its Board feels a certain sense of pride and satisfaction.

It is Board policy that there should be equal opportunity for everyone who works in ESB regardless of category, background and sex. During the year a full-time Project Officer was appointed to implement that policy. The Board will welcome rapid progress which it hopes will come from the appointment and from the ESB/Union joint working party.



On location - ESB staff who starred in the Christmas greetings filmlets.

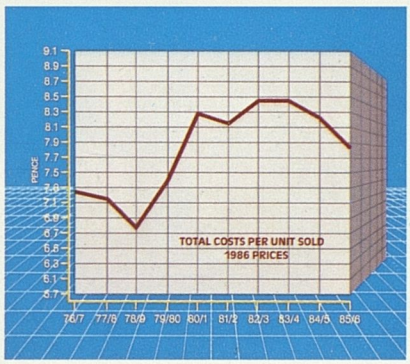
PERFORMANCE

Objectives

In 1981 the Board adopted as one of its corporate objectives that price improvement should govern the management and operation of all ESB activities. The target was set, in the context of the inflation of the time, to keep increases in electricity prices below the level of inflation. It followed from the corporate objective that sub-objectives were set to improve the performance trends of every factor which affects electricity prices. The following pages set out the results achieved.

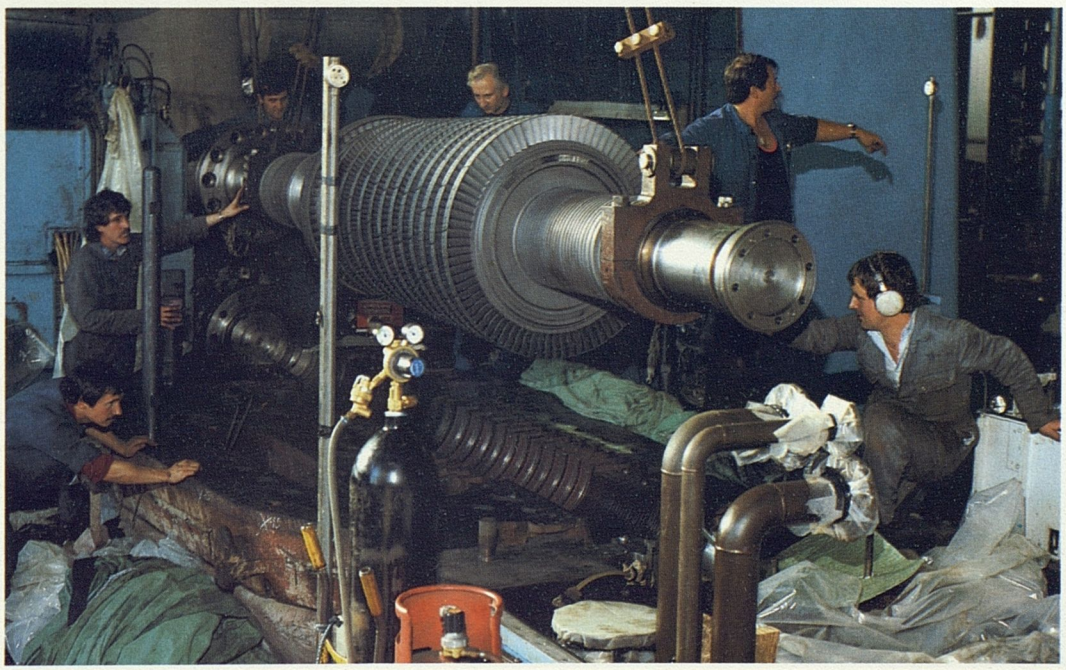
Financial

The financial performance of the ESB, over the past decade, reflects the economic and financial conditions of the Irish economy and world fuel markets in that period. The second international oil shock, in 1979, directly increased fuel prices and indirectly impacted on other costs resulting in higher inflation throughout the world. Following a reduction in electricity prices in 1978, the post oil shock trend in prices was in excess of national inflation. These external cost factors were compounded by the zero growth in demand for electricity for the three years of the recession. Since 1982/'83, however, the success of the Board in containing costs over which it has control, in addition to the sustained growth of the past three years, has made it possible to hold the increase in electricity prices below the level of national inflation. Since 1981/'82 electricity prices have significantly improved in real terms with prices rising by 22% compared to the consumer price index increase of 40%. Graph 2 shows that the cost per unit sold in real terms is now below its 1980/81 level.

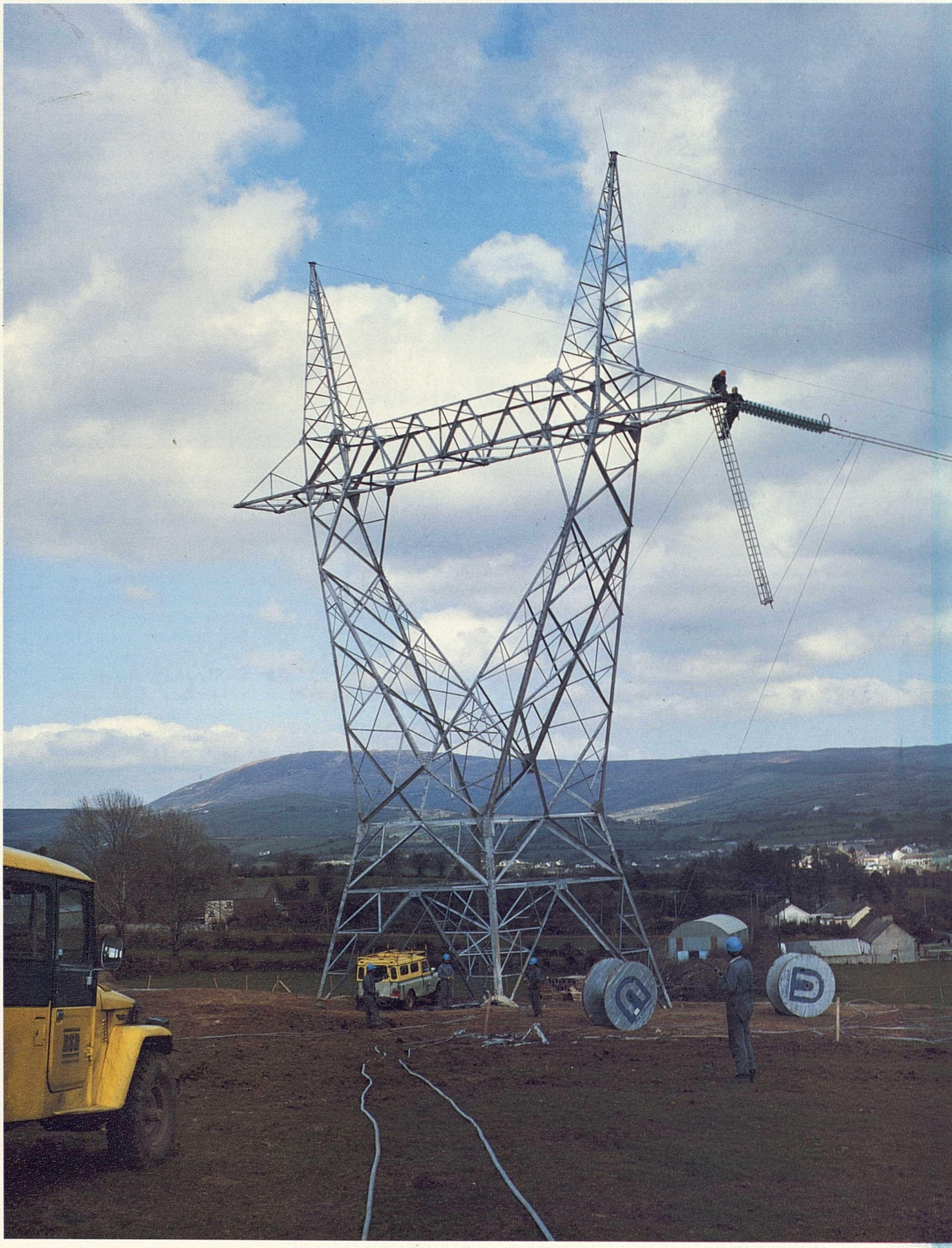


Graph 2

The year 1985/86, will be remembered as the year when the trend in all the major cost elements in electricity production began to come right. These favourable factors included fuel prices, interest rates, currency rates, inflation, staff levels. The year-end outcome was therefore considerably better than that initially forecast. If the predictions by economic and energy forecasters



Maintenance personnel at work on 270MW turbine in Poolbeg Generating Station.



Even pylons can have their own surreal beauty....the 400kV line takes to the air to bring vital energy to the whole nation.

of some further years of favourable conditions hold good, the Board could hope to improve significantly its financial position by eliminating its large accumulated deficit and bring about further improvement in electricity prices.
The capital structure which had deteriorated in the 1980's due to the major investment in Moneypoint, deficit financing and major currency losses, improved during the past year to a level where the percentage of debt to net assets is now 75%, the lowest since 1979/80. The improvement is due mainly to a weakening US dollar, higher internal resource generation and a declining investment programme.
The mix of borrowings has also been improved with an overall reduction in reliance on foreign borrowings from a high of 77% in 1983/84, to 67% at 31st March, 1986.

* *Debt Servicing plus Rates Levy*

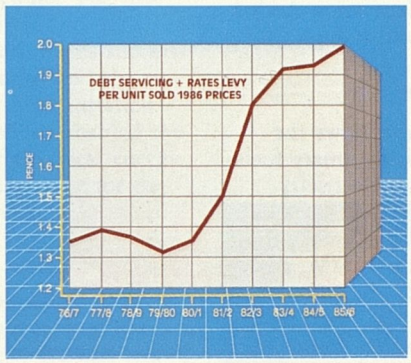
Prior to the current year, these costs were apportioned and reflected in Generation/Transmission and Distribution added costs. The upward movement since 1979/80 reflects the introduction of the rates levy of £10 million in 1982, its doubling in 1983, together with higher debt servicing charges due to the increased level of borrowings, required to finance capital expenditure on Moneypoint, and the declining value of the Irish £ (Graph 3).

* *Debtors*

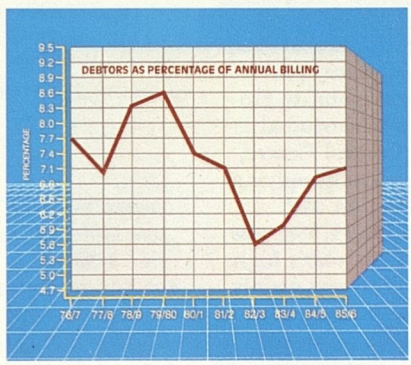
The overall level of debt has reduced over the last ten years despite the recession. This has been achieved through the extensive use of "Pay as you Use" payment systems. These systems help customers to pay their bills and also improve ESB cash flow (Graph 4).

Fuel

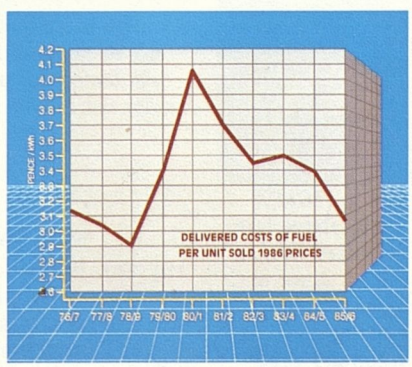
The fuel cost per unit sold has fallen significantly from the 1980/81 peak. This trend continued in the past year as the average cost of fuel imports was reduced by the introduction of coal-fired generation at Moneypoint, the fall in oil prices and the weakening of the US dollar (Graph 5). The fall in the cost of imported fuels was partially offset by an increase in the cost of native fuels.



Graph 3



Graph 4



Graph 5

Generation

* *Generation Added Costs - Pence per Unit Sold*

Continuing tight control of costs combined with the increase in sales has contributed to the downward trend in Generation Added Costs per unit sold (Graph 6).

* *Thermal Efficiency*

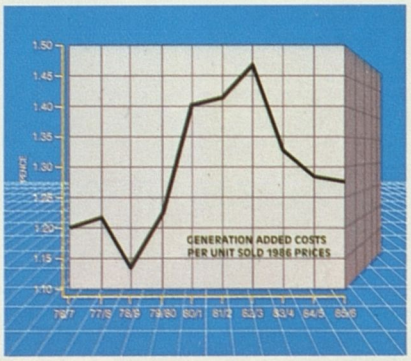
Thermal efficiency shows the efficiency at which primary fuels are converted into electricity. The overall thermal efficiency of conversion of primary energy from thermal plant was 34.4%, compared with 34.2% for last year. This efficiency is approaching the practical maximum achievable for the available plant mix and demand profile. The thermal efficiency for all gas burning plant was maintained at last year's figure of 38.7% (Graph 7).

* *Plant Availability*

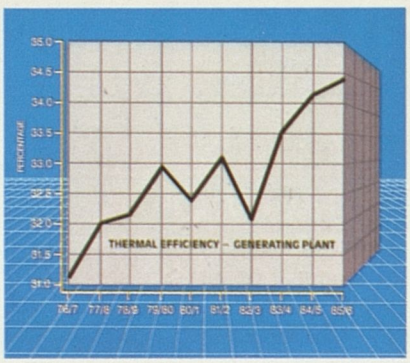
The availability of plant, particularly high merit plant, to produce electricity when required by the National Control Centre, is critical to the task of supplying electricity at minimum cost. Plant availability, at 75.5%, was slightly down on last year's high figure of 78.6%. This was mainly due to breakdowns in major plant. However, supplies to customers were not affected (Graph 8).

* *Production*

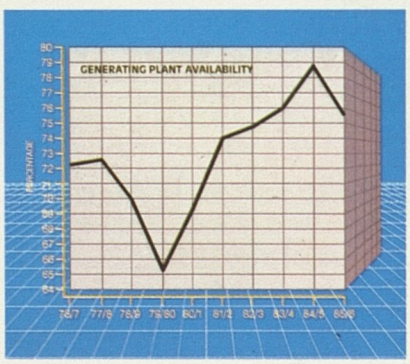
System demand required the generation of 11,465 million units, an increase of 4.5% over the previous year. Units sold from this generation yielded a corresponding increase of 5.5%. The peak demand, normally expected in December or January, occurred in February this year. It reached a level of 2,130MW which was only 1.8% above last year's level. This resulted in a record high system load factor of 61%. Load Management Programmes were the major contributor. These voluntary programmes offer tariff incentives to customers to reduce demand at peak periods and to increase utilisation at times of low demand.



Graph 6



Graph 7



Graph 8

The annual system load factor has increased from 57.1% to 61% over the past decade. This is the equivalent of a reduction of 165MW in peak demand equal to an investment of £130 million at to-day's plant costs.

Hydro inflows for the year were well above normal and at 862 GWh generation was almost 20% above long-term average. This represents a saving of £5 million in generation replacement costs.

Because of the wet Summer, the quantity of turf available was below expectation and units generated from turf were 17% below normal. Production from natural gas was almost the same as last year.

For the first time since the 1950's, imported coal was used to generate electricity in the first of the large coal burning units at Moneypoint. Units generated from oil increased from 20% to 26% on last year. Of all units produced during the year, 72% were from indigenous sources.

* *Capacity*

A 300MW coal burning unit was commissioned in Moneypoint during the year and a 5MW station at Miltown Malbay was decommissioned. The total installed capacity (excluding plant in storage) at 31st March 1986 was 3,547MW. 420MW of Plant was in long-term storage while an additional 50MW was retired or about to be retired.

Transmission

* *Transmission Added Costs*

The transmission added cost increased in real terms in the year. This is mainly due to increased depreciation charges arising from the commissioning of the 400kV lines as well as increased maintenance (Graph 9).

The construction programme was on target at year end. It was mainly on the 400kV and 220kV developments associated with Moneypoint Generating Station.

* *400kV System*

The 400kV Stations at Moneypoint and Woodland (Co. Meath) were commissioned. Construction work on the third station at Dunstown (Co. Kildare) and the installation of the additional equipment for the connection of the second generator at Moneypoint is well advanced.

The 400kV line from Moneypoint to Woodland was commissioned.

The line from Moneypoint to Dunstown which is due for commissioning in September 1986 is on schedule. The first 400kV cable circuit at Moneypoint Station was successfully commissioned and the second circuit has been installed.

These developments enabled the transmission of electrical energy at 400kV to take place for the first time in Ireland.

* *220kV System*

Outage and line wayleave problems which have delayed the commissioning of Raffeen and Arklow 220kV Stations were resolved at year end.

Progress on the 220kV Station at Prospect (Co. Clare) was on target. Construction of loop lines into Dunstown 400kV Station is well advanced. Work on the Great Island-Arklow 220kV line has recommenced after delays due to legal action.

* *110kV System*

The new 110kV Indoor Station at Harolds Cross (Dublin) was completed and is the first 110/10kV Station to supply the city.

8 Kms of new single circuit 110kV line was commissioned while 7 Kms of old 95 sq. mm. copper line was retired. Work is progressing on the construction of 36 Kms of new line, with preliminary survey work on a further 25 Kms.

The major 110kV cable circuit from Finglas to Grange in Co. Dublin was commissioned and one short cable circuit was retired at Finglas.

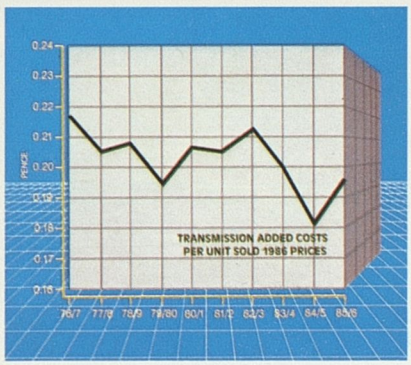
Distribution

* *Distribution Added Costs*

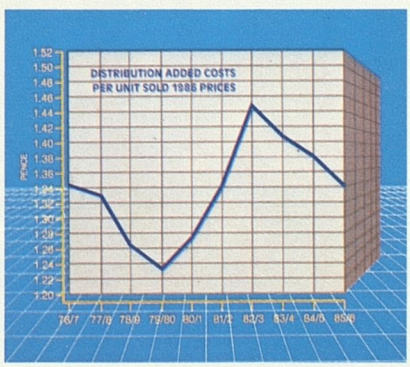
The distribution added costs per unit have continued to decline in real terms against a background of increasing unit sales. The objective is to maintain and increase standards of supply while containing costs (Graph 10).

Capital Expenditure

During 1985/86 capital expenditure on generation, transmission and distribution amounted to £172 million. This is down by £68 million from last year's figure and reflects the tailing-off in the construction projects. Capital expenditure in the medium term, under present plans, is anticipated to be at lower levels.



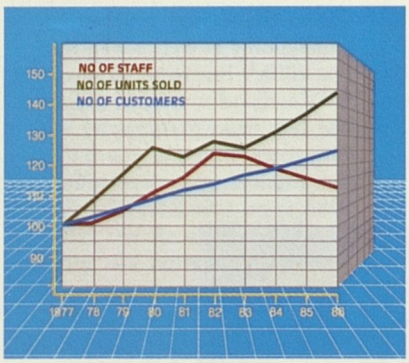
Graph 9



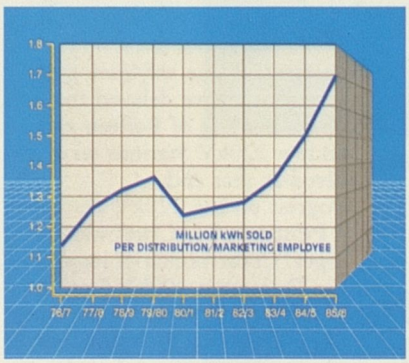
Graph 10

Staffing Levels

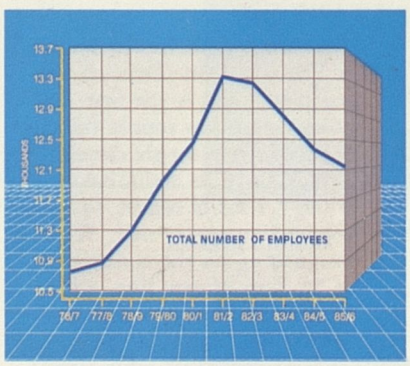
Against a background of increased sales of 15% over 3 years, employee numbers have declined by 1101. The actual decrease in the year was 340 (Graphs 11, 12, 13, and 14).



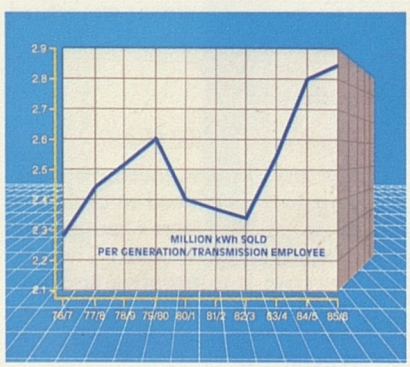
Graph 11



Graph 12



Graph 13



Graph 14

FISHERIES AND CONSERVATION

The ESB's commercial fisheries continue to be successful, with £176,000 profit for the year.
The salmon run in the Shannon, Lee, Erne, Liffey and Clady, improved during 1985 and, as a result, the ESB salmon hatcheries were full during the Winter of 1985. This was a welcome change from the trend of previous years. Heavy restocking with young salmon continued during the year in all ESB rivers.
With Udaras na Gaeltachta the ESB pioneered the large-scale sea-farming of salmon. The experience gained in the Lettermullen farm has stimulated the establishment of many more farms. In the ESB Mulroy Bay farm in Co. Donegal 135 tonnes of farmed salmon was produced. During the year a second salmon farm was established there.
The ESB continued its policy of encouraging local interests in salmon farming. A joint venture in Killybegs, with Gallagher Brothers, is in operation. A second phase of expansion of this farm is underway to increase the capacity to 350 tonnes a year. Other similar developments are planned elsewhere.
A separate Annual report has been prepared on Fisheries and Conservation activities in the year ended 31st March, 1986.

AMENITIES

Over the years the Board has carried out developments at its lakes and rivers to make them available to the public for recreation and sport. There is close cooperation with local community bodies. Sightseeing is encouraged at the Board's power stations and an estimated 22,000 visitors were received last year.

JOINT OIREACHTAS COMMITTEE ON STATE SPONSORED COMPANIES

This Committee is investigating the ESB at present. The Board welcomes the opportunity to give an account of its stewardship to the members of the Oireachtas. Its policy is to cooperate in every way with the investigation which it sees as



Pollaphuca dam nestles in the beauty of the winter snow.

an important control on the accountability of State Companies to the Oireachtas. There have been a number of public hearings and members of the Committee have visited the ESB. The meetings have been conducted in a most constructive and open atmosphere. The Board looks forward to receiving the Committee's Report in due course.

THE FUTURE

The mission of the ESB is to provide a first-class electricity service to all its customers at the best possible prices, without subsidy of any kind, and to guarantee good secure employment for its staff. Good long range strategic planning is crucial to the achievement of this mission. A long range plan is complex, having to include power stations, fuel, transmission/distribution, marketing, technological development, economic activity, population and employment, education and many others about which forecasting the future is more a matter of astrology than science! Nevertheless work has been going on in ESB assessing the merits and implications of all the options and the Board hopes that it will be in a position to submit a draft plan to the Minister for Energy by the end of this year.

Generation plant construction is the most important aspect of a long range plan because of the enormous capital investment and lead-times which it requires. This and the fuel cost mainly determine the price of electricity. With the completion of Moneypoint new plant will not be needed before the nineties. By then interconnection with other electricity companies to import cheap electricity will be an option instead of the construction of new power stations. Ireland and Greece are the only EEC states which are not joined to the European grid. Technology for the long distance transmission of electricity, overground and undersea, is now well established. The feasibility of major links with the UK or directly with mainland Europe is being studied by the ESB and these studies are well advanced. At the end of the day the decision will depend as much on political issues as on technical or financial considerations.

In the early seventies the construction of a nuclear station was proposed by the Board. This was before the energy crises when high growth rates in electricity demand seemed assured for the future. In the recession and uncertainty which followed the oil crises the Board allowed the nuclear proposal to lapse. It is the Board's view now that a nuclear station should not be considered an option in its next long-range plan which will cover a period beyond the year 2000.



In a science fiction setting molten metal is poured....the 125kW induction furnace can melt 33lbs of iron to bubbling consistency in less than four minutes - for 60p.

THE BOARD

The following are the members of the Board at the 17th June, 1986:-

Professor Charles Dillon, M.E., C.Eng., F.I.E.I., F.I.E.E., F.I. Mech.E., CHAIRMAN (18)

Mr. Seamus Conerney (16)

Mr. William Cremins (18)

Ms. Betty Dillon

Mr. Patrick J. Kevans (14)

Mr. Joe LaCumbre (17)

Mr. Kevin Lynch, Dip. Eng. (Mech.), M. Ind. Eng., C.Eng.M.I.E.I. (16)

Mr. Colm McCarthy, B.Comm., M.Econ.Sc. (16)

Mr. Patrick J. Moriarty, F.Mgt.I., F.C.I.S.,F.I.P.M., CHIEF EXECUTIVE (18)

Mr. Noel S. O'Hara, B.E., M.I.E., C.Eng., M.I.E.I. (17)

The term of office of Mr. Liam Boyd ended on 30th April 1986.
Mr. Boyd was first appointed to the Board in April 1976. A former General Manager of TWA in Ireland, Mr. Boyd's business life covered many aspects of industry and commerce. He brought this experience to the Boardroom of the ESB as well as support for enterprise and for the development of natural resources and amenities. The Board appreciates the great contribution which Mr. Boyd made to the Public Service in his years as a Board Member and thanks him most sincerely. The Board welcomes the appointment of Ms. Betty Dillon to the Board in April, 1986.

During the year ended 31st March 1986 there were 18 separate meetings of the Board. The numbers in brackets opposite each name above are the number of meetings attended by each Board Member.

This report was approved by the Board at its meeting on June 17th, 1986 for submission to the Tanaiste and Minister for Energy.

SIGNED: Charles T.G. Dillon *Chairm*

P.J. Moriarty *Chief Executiv*

J.F. Williams *Secretary*

ESB

Bord Soláthair an Leictreachais

Accounts and Schedules for year ended 31st March, 1986.

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Auditors' Report

Profit and Loss Account

Account No. 1

1984/1985 £000's		£000's	1985/1986 £000's
	Operations		
42,893	Electricity Income and Expenditure Account (Schedule A)		70,236
(1,155)	Appliance and Contracts Income and Expenditure Account (Schedule B)		(1,093)
748	Consultancy Income and Expenditure Account (Schedule C)		28
42,486			69,171
(473)	Expenses on New Borrowings		(727)
42,013	Operations Surplus		68,444
(69,031)	Amortisation Charge (Schedule A)		(76,110)
	Non-Operating Items		
13,546	Non-Repayable Supply Contributions (Schedule J)	13,808	
3,152	Credits on Disposal of Assets and on ESB Stock Cancellations (Schedules J and G)	2,512	
11,282	Interest on Sinking Fund Investments (Schedule G)	11,031	27,351
(27,980)	Transferred to Capital Reserves and Sinking Fund		(27,351) –
(27,018)	Surplus/(Deficit) for Year		(7,666)
(37,431)	Deficit brought forward from previous year		(64,449)
£(64,449)	Deficit carried forward to next year		£(72,115)

Notes: Adjustments in year-end parities of foreign borrowings have been reflected in Repaid Capital Reserve (Schedule J).

: No amount has been included in Financial Statements in respect of a consequential loss claim against the Board's insurers which has not yet been settled.

Balance Sheet

Account No. 2

31st March, 1985				31st March, 1986
		Assets Employed:		
£000's	Reference		£000's	£000's
1,356,884	Schedule E	**Net Investment in Capital Assets** including work-in-progress		1,469,423
286,237	Schedule F	**Current Assets**	319,552	
		Less:		
208,689	Schedule F	**Current Liabilities**	163,046	
77,548		**Net Current Assets**		156,506
77,083	Schedule G	**Sinking Fund Investments,** at cost (including interest accrued £3,401)		60,570
£1,511,515				£1,686,499
		Financed as follows:		
1,256,505	Schedule H	**Borrowings**		1,284,819
		Reserves		
242,376	Schedule J	Capital	413,225	
77,083	Schedule G	Sinking funds for repayment of borrowings	60,570	
(64,449)	Account No. 1	Profit and Loss Account balance (deficit)	(72,115)	
255,010				401,680
£1,511,515				£1,686,499

Note: At 31st March, 1986 contractual capital commitments amounted to approximately £43m. (1985 – £122m.).
In addition, work approved by the Board but not yet contracted for amounted to approximately £117m. (1985 – £384m.).

Signed: Charles T. G. Dillon *Chairman*

Signed: P. J. Moriarty *Chief Executive*

D. Connaughton *Director, Finance*

8th July, 1986

Electricity Income and Expenditure Account

Schedule A

1984/1985 £000's						1985/1986 £000's
		£000's	£000's	£000's	£000's	
696,506	Income – Electricity Sales	757,172				
1,880	– Miscellaneous	2,311				
698,386						759,483
	Expenditure:	Generation	Transmission	Distribution	Total	
303,013	Fuel (including purchased electricity)	299,782			299,782	
150,098	Operation, maintenance and local charges	69,054	7,549	85,216	161,819	
50,219	General charges	22,460	5,213	29,046	56,719	
5,417	Stations now decommissioned	3,533			3,533	
46,171	Depreciation	29,865	6,322	16,003	52,190	
554,918		424,694	19,084	130,265	574,043	
	Unapportioned Costs:					
22,250	Rates Levy	23,250				
78,325	Interest	91,954				
655,493						689,247
42,893						70,236
69,031	Amortisation Charge (Schedule M - Note 9)					76,110
£(26,138)	Surplus/(Deficit)					£(5,874)

Notes: – All figures in £000's

Fuel includes: Excise Duty on Mineral Hydrocarbon Oil £11,206 (Previous Year £8,523).

Charges include: Fisheries Net Cost £630 (£817), Local Authority Rates £2,861 (£2,501), Bad Debts £1,345 (£970), Audit Fee £80 (£75), Board Members' Remuneration including full-time Chairman £51 (£49).

Appliance and Contracts Income and Expenditure Account Schedule B

	Total		Appliance Sales		Appliance Repairs		Installations Contracts	
	1984/1985	1985/1986	1984/1985	1985/1986	1984/1985	1985/1986	1984/1985	1985/1986
	£000's	£000's	£000's	£000's	£000's	£000's	£000's	£000's
Income	15,037	17,818	9,897	12,823	1,551	1,617	3,589	3,378
Direct Costs	12,017	14,706	7,920	10,448	1,302	1,584	2,795	2,674
Gross Profit	3,020	3,112	1,977	2,375	249	33	794	704
Overheads:								
Payroll costs	2,254	2,455	1,253	1,460	595	617	406	378
Publicity	125	200	125	200	–	–	–	–
Premises costs	943	890	586	502	296	310	61	78
Sundry expenses	246	254	133	187	23	39	90	28
General charges and interest, as apportioned	1,481	1,298	781	549	433	460	267	289
	5,049	5,097	2,878	2,898	1,347	1,426	824	773
Less: transfer to Electricity Income and Expenditure Account (See Schedule M – Note 12)	874	892	–	–	797	814	77	78
	4,175	4,205	2,878	2,898	550	612	747	695
Surplus/(Deficit) transferred to Profit and Loss Account	£(1,155)	£(1,093)	£(901)	£(523)	£(301)	£(579)	£47	£9

Consultancy Income and Expenditure Account

Schedule C

1984/1985			1985/1986
£000's		£000's	£000's
13,151	Income		12,776
	Expenditure:		
9,963	Direct Costs	10,530	
	Overheads:		
1,089	Directly allocated	940	
1,351	General charges and interest, as apportioned	1,278	
12,403			12,748
£748	Surplus transferred to Profit and Loss Account		£28

Note: This Account includes the result of ESB Joint Venture with Saudi Consulting House up to 31st December, 1985.

Statement of Source and Application of Funds

Schedule D

1984/1985 £000's	*Reference*	Source:		1985/1986 £000's
42,013	Account No. 1	Operations before Amortisation Charge		68,444
2,235	Schedule I	Provision towards premium on Stock Redemption		2,431
51,384	Schedule E	Depreciation		57,650
3,152	Account No. 1	Credits on disposal of assets and on Stock Cancellations		2,512
11,282	Account No. 1	Interest on Sinking Fund Investments		11,031
6,097	Schedule G	Decrease in Sinking Fund		16,513
116,163				158,581
13,546	Account No. 1	Non-Repayable Supply Contributions		13,808
172,377	Schedule H	Borrowings		204,970
£302,086				£377,359
		Application:		
240,436	Schedule E	Capital expenditure		171,744
92,654	Schedule H	Redemption of Borrowings		123,163
958	Schedule G	Payment of premium on Premium Stock		3,494
	Schedule F	Net Movement in Current Assets/Current Liabilities:		
		– Cash/Temporary Investments/ESB Stocks	9,244	
		– Debtors/Creditors	64,059	
		– Inventories	5,655	
(31,962)				78,958
£302,086				£377,359

Statement of Capital Assets

Schedule E

(Including Analysis of Depreciation)

	Total Gross Assets at 31st March 1985	Additions during year	Retirements during year	Total Gross Assets at 31st March 1986	Less Accumulated Depreciation	Total Net Assets at 31st March 1986
	£000's	£000's	£000's	£000's	£000's	£000's
ASSETS						
Generation	473,434	345,486	289	818,631	217,956	600,675
Transmission	162,938	54,192	269	216,861	50,464	166,397
Distribution	390,871	32,495	2,525	420,841	143,006	277,835
General Buildings, Transport and Working Equipment	93,172	7,166	1,406	98,932	25,326	73,606
Fisheries	1,038	139	–	1,177	194	983
	1,121,453	439,478	4,489	1,556,442	436,946	1,119,496
Work-in-Progress, including payments on account						349,927
Net Investment in Capital Assets						£1,469,423

Work carried out in the year amounted to £171.744m. (1984/1985 £240.436m.).

ACCUMULATED DEPRECIATION

	£000's	£000's
Total as at 31st March, 1985		382,230
Movements in year:		
Depreciation of assets - Plant and Buildings	52,220	
- Tools, Vehicles etc.	5,430	
	57,650	
Assets Retired	(4,489)	53,161
		435,391
Transfer from Asset Renewal Reserve (Schedule J)		1,555
Total as at 31st March, 1986		£436,946

Statement of Current Assets and Current Liabilities

Schedule F

31st March, 1985 £000's		Nominal Value £000's (1984/1985)		£000's	£000's	31st March, 1986 £000's
	Current Assets					
9,126	**Bank Deposits (Net) and Cash**					17,598
	Temporary Investments at cost:					
19,289	– Government Stocks	21,646	25,892		23,499	
–	– Euro Bonds	–	1,808		1,701	
19,289						25,200
6,823	**ESB Stocks** – to support market	7,059	1,623			1,684
	Accounts Receivable:					
	Electricity: billed			62,332		
133,219	: unbilled			85,003	147,335	
16,005	Appliance and Contracts (including £16.4m. Hire Purchase, maximum term 5 years)				17,235	
	Others: VAT Refund Due			2,918		
	: Sundry (completed) Repayable Work			13,575		
30,946	: Miscellaneous			17,635	34,128	
180,170						198,698
	Inventories:					
33,324	Fuel				37,299	
32,507	Plant/Network Stocks and Miscellaneous Spares and Sundries				33,255	
1,922	Appliances				2,854	
67,753						73,408
3,076	**Repayable Work-in-Progress at cost**					2,964
£286,237						£319,552
	Current Liabilities					
92,090	**Accounts Payable**					66,237
3,246	**Progress Payments on Repayable Work-in-Progress**					3,006
43,612	**Temporary Borrowings and Borrowings for Hire Purchase financing**					20,016
6,075	**Supply Contributions and Deposits**					6,368
29,476	**Accrued Charges and Provisions**					30,447
34,190	**Accrued Interest on Borrowings**					36,972
£208,689						£163,046

Statement of Sinking Funds for Borrowings

Schedule G

1984/1985 £000's		£000's	1985/1986 £000's
78,324	Opening Balance – Investments	73,237	
4,856	– Interest Accrued	3,846	
83,180			77,083
	Additions:		
69,031	Amortisation charge in year (Account No. 1)	76,110	
2,235	Provision for premium on ESB Stocks (Schedule I)	2,431	
569	Credits on cancellation of ESB Stocks	72	
11,282	Interest for year (including interest accrued)	11,031	
83,117			89,644
166,297			166,727
	Utilisation:		
	Redemption of borrowings viz:–		
	– Minister for Finance	1,836	
	– ESB Stocks (including credits on cancellation)	19,301	
	– Other Borrowings	81,526	
(88,256)	Reflected in Repaid Capital Reserve (Schedule J)		(102,663)
(958)	Premium Paid on Stock Redemption		(3,494)
	Closing Balance: (as per Balance Sheet)		

		Market £000's	Cost £000's		
	Investments – Government Stocks	28,811	20,255		
	– Euro Bonds	44,980	36,914		
73,237				57,169	
3,846	Interest accrued			3,401	
£77,083					£60,570

Note: Redemption of individual Borrowings is shown in detail in the Appendices.

Statement of Borrowings

Schedule H

	Balance Outstanding 31st March, 1985 £000's	Borrowed during year £000's	Redeemed during year £000's	Adjustment for currency changes £000's	Balance Outstanding 31st March, 1986 £000's
Irish Pound Borrowings:					
Fixed Rate Facilities	148,356	35,000	22,039	–	161,317
Floating Rate Facilities	203,500	61,000	8,825	–	255,675
	351,856	96,000	30,864	–	416,992
Foreign Currency Borrowings:					
Project Finance	511,991	28,459	20,480	(-) 19,940	500,030
Fixed Rate Facilities	239,986	19,612	40,471	4,464	223,591
Floating Rate Facilities	152,672	60,899	31,348	(-) 38,017	144,206
TOTAL – FOREIGN CURRENCY BORROWINGS	904,649	108,970	92,299	(-) 53,493	867,827
TOTAL – IRISH POUND BORROWINGS	351,856	96,000	30,864	–	416,992
TOTAL – ALL BORROWINGS	£1,256,505	£204,970	£123,163	(-)£53,493	£1,284,819

Note: Individual borrowing details are shown in the Appendices.

Statement of Borrowings

Currency and Repayment Profile of Borrowings

	Repayable Within 1 Year £000's	Repayable Within 2 to 5 Years £000's	Repayable Within 6 to 10 Years £000's	Repayable After 10 Years £000's	Total £000's	Currency as % of Total Borrowings %
Irish Pounds	25,985	189,896	164,551	36,560	416,992	33
European						
Sterling	2,827	7,493	25,503	20,412	56,235	4
Deutsche Marks	18,782	106,985	57,623	7,950	191,340	15
Swiss Francs	7,095	49,281	92,296	9,928	158,600	12
Belgian Francs	2,102	3,995	–	–	6,097	–
French Francs	2,507	6,792	4,642	4,574	18,515	2
Dutch Guilders	2,876	34,119	9,837	16,062	62,894	5
Luxembourg Francs	–	2,093	16,597	10,728	29,418	2
ECU's	–	1,328	5,030	5,321	11,679	1
Others						
U.S. Dollars	33,673	102,629	49,112	26,460	211,874	17
Canadian Dollars	5,522	24,848	–	–	30,370	2
Japanese Yen	2,410	31,388	34,186	22,327	90,311	7
Miscellaneous	87	262	145	–	494	–
	103,866	561,109	459,522	160,322	1,284,819	
Repayment Profile	8%	44%	36%	12%		100%

See Note No. 9 – Amortisation of Borrowings

Statement of Interest

Schedule I

1984/1985 £000's		£000's	£000's	1985/1986 £000's
	Interest on:			
	Advances from Minister for Finance		1,613	
	Borrowings in Irish pounds	45,493		
	Add: Provision for funding of premium on redemption of ESB Stocks	2,431		
			47,924	
	Borrowings in other currencies		81,378	
			130,915	
	Less: Interest from temporary cash investment		5,286	
£118,863				£125,629
	Allocated as follows:			
	Interest:			
	Income and Expenditure Accounts:			
	– Electricity		91,954	
	– Appliance and Contracts		233	
	– Consultancy		418	
	Fisheries		79	
	Capital Works		32,945	
£118,863				£125,629

Statement of Capital Reserves

Schedule J

	£000's	£000's	£000's
Non-Repayable Supply Contributions:			
Contributions from State under Electricity (Supply) Acts towards capital cost of supplying rural areas – as at 31st March, 1985		27,890	
Other contributions – as at 31st March, 1985	99,509		
Additions in year	13,808		
		113,317	
			141,207
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, 1985		101,194	
Movements in year:			
Amortisation of Borrowings (Schedule G)	102,663		
Adjustment for changes in currency parities (Schedule M – Note 8)	53,493		
		156,156	
			257,350
***Asset Renewal Reserve:**			
Balance as at 31st March, 1985		13,783	
Credits arising on disposal of assets retired (Account No. 1)		2,440	
Less amount allocated to depreciation fund (Schedule E)		(1,555)	
			14,668
Total as at 31st March, 1986 (as per Balance Sheet)			£413,225

*The policy on Asset Renewal Reserve is explained in Schedule M – Note 3.

Fisheries – Commercial and Conservation Operations

Schedule K

Total Cost 1984/1985 £000's		£000's	Total Cost 1985/1986 £000's	Commercial £000's	Conservation £000's
1,068	Direct Costs		1,399	701	698
	Overheads and General Charges:				
194	Payroll, expenses and charges	152			
29	Depreciation	30			
77	Interest on Borrowings	79	261	134	127
1,368			1,660	835	825
	Less:				
551	Sales of fish, letting of fishing rights and miscellaneous income		1,030	1,014	16
817	Net Cost before Amortisation, as per Electricity Income and Expenditure Account		630	(179)	809
9	Amortisation Charge		9	3	6
£826	**Net Cost/(Surplus) for Year**		£639	£(176)	£815

Value Added Statement

Schedule L

1984/1985 £000's			1985/1986 £000's
	Sources of Income:		
696,506	Electricity Sales (Schedule A)	757,172	
15,037	Appliance and Contracts Trading (Schedule B)	17,818	
13,151	Consultancy (Schedule C)	12,776	
1,880	Miscellaneous	2,311	
726,574			790,077
	Less Costs of:		
303,013	Fuel (including Excise Duty on Mineral Hydrocarbon Oil £11,206)	299,782	
96,624	Materials and Services (including Rates Levy £23,250)	109,601	
51,384	Depreciation of Assets	57,650	
451,021			467,033
£275,553	**Value Added**		£323,044
	Distribution of Value Added:		
154,238	Employees – Payroll (Inclusive of deductions for PAYE/PRSI etc.)		161,916
	Lenders		
79,302	– Interest	92,684	
69,031	– Amortisation of Borrowings	76,110	
148,333			168,794
(27,018)	Reduction/(Increase) in Deficit brought forward		(7,666)
£275,553			£323,044

Basis of Accounting:

1. The Financial Statements (Accounts/Schedules) are prepared in accordance with generally accepted accounting principles; however, an amortisation charge is made which is calculated to spread recovery from Income of amounts borrowed together with the effect of any currency movements on such borrowings (See Note 8). This treatment is considered to be appropriate to a public utility and is consistent with the requirements of the Electricity (Supply) Acts 1927 - 1985.
   The Financial Statements are expressed in Irish pounds (£s).

Principal Accounting Policies:

2. **Capital Assets:**
   Capital Assets are valued at cost. Cost includes prime cost, overheads and interest costs during construction. Assets include land (£48.9m) most of which is held freehold.
   Leased assets are not capitalised and payments under such leases are charged to the Electricity Income and Expenditure Account: at year end, the capital element of outstanding finance leases amounted to £30m.

3. **Depreciation of Capital Assets:**
   Depreciation is designed to recover historical cost over allotted lifespans.
   Methods used are appropriate to the nature of the Board's business and to the character and extent of its capital assets.
   Assets are grouped and allotted lifespans in line with international practice.
   Major asset classifications and their allotted lifespans are:–

: Generation Plant and Thermal Station Structures (other than Moneypoint Station)	20 years
: Distribution Plant and Structures	25 years
: Transmission Plant and Structures and Moneypoint Station Plant	30 years
: General Buildings, Hydro Stations and Moneypoint Station Structures	50 years

   Depreciation is provided:
   : On the straight-line method for Transmission, Distribution and General Assets.
   : On a projected plant usage basis for Generating Units.
   : On all assets from date of commissioning.
   Assets when retired from service are charged against Accumulated Depreciation.
   Asset Renewal Reserve (Schedule J): The proceeds of disposal and stores value of assets retired are credited to Asset Renewal Reserve; shortfalls arising in the depreciation fund are recovered therefrom.
   Depreciation continues to be provided on decommissioned stations which, together with other costs pertaining thereto, are disclosed separately.

4. **Inventories:**
   Stocks are valued at the lower of average cost and net realisable value.
   Spares held to provide for major plant breakdowns are capitalised as part of generating plant and depreciated accordingly.

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

6. **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.

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 Borrowings 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. Changes are reflected in the Capital Reserve.

9. **Amortisation of Borrowings:**
   This charge is made to reflect certain provisions of Section 21 (2) of the Electricity (Supply) Act, 1927.

It is determined as follows:
: The charge for ESB stock issues is in accordance with contractual commitments.
: The charge for other borrowings is calculated at 5% of their Irish Pound value as at the previous year-end.
: The charge to cover cumulative effect of exchange rates adjustments is calculated at 5% of the aggregate adjustment for changes in currency parities over the previous five years.

The sinking fund provision towards the premium element payable on redemption of ESB Premium Stock is included in the charge for interest.

Sinking Fund Investments are stated at cost.

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

11. **Hire Purchase Transactions:**
Profit on Hire Purchase sales is taken in the year of sale. Credit for interest is taken on a reducing balance basis over the Hire Purchase term.
Hire Purchase financing operations are reflected in the Appliance Sales Activity.

12. Apportionments:

(a) Capital Expenditure:
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 and Contracts Income and Expenditure Account:
This account bears appropriate proportions of general overhead expenses and interest; premises costs include a charge for depreciation. Overhead elements of Appliance and Installations Contracts which are appropriate to the Electricity Income and Expenditure Account have been allocated directly as they occur. An amount, calculated at 75p per customer, is transferred to the latter account, in recognition of the total safety and social role of Appliance Repairs and Installations Contracts.

(c) Consultancy and Fisheries bear appropriate proportions of general overhead expenses and interest.

13. **Taxation:**
The Board is liable for Corporation Tax at the reduced rate applicable to manufacturing companies. Because of large continuing capital expenditure, liability to tax will not arise in the foreseeable future and a deferred tax provision is not deemed necessary (unutilised capital allowances at 31st March, 1986 are estimated at £844m). The potential tax liability deferred as a consequence of accelerated capital allowances is estimated at £23m. (31st March, 1985 – £19.6m)

14. **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 has been applied to Moneypoint Generating Station pre-commissioning costs.

15. **Superannuation Scheme:**
The Board contributes towards a pension scheme for staff under the provisions of the Electricity Supply Board (Superannuation) Act 1942 as amended: the scheme is subject to regular actuarial review. The Board's liability is confined to such contributions.

16. **Accounting Year:**
Income and Expenditure are aligned on a 52 or 53 week year as appropriate. The year 1985/1986 is a 52 week year (1984/1985 – 52 weeks).

Current Cost Profit and Loss Account

Schedule N

1984/1985 £000's		£000's	1985/1986 £000's
(27,018)	**Surplus/(Deficit) as per Profit and Loss Account,** after Interest and Amortisation		(7,666)
	Current Cost Operating Adjustments:		
(47,925)	Depreciation	(48,214)	
(3,594)	Cost of Sales	11,755	
(3,091)	Monetary Working Capital	(2,171)	
(54,610)			(38,630)
(81,628)			(46,296)
32,766	Gearing Adjustment		22,405
£(48,862)	**Current Cost Surplus/(Deficit)**		£(23,891)

Current Cost Balance Sheet

Schedule O

31st March, 1985				31st March, 1986
	Assets Employed:	£000's	£000's	£000's
£000's				
1,944,524	Fixed Assets		2,027,183	
77,740	Net Current Assets		150,125	
77,083	Sinking Fund Investments		60,570	
£2,099,347				£2,237,878
	Financed as follows:			
1,256,505	Borrowings		1,284,819	
	Reserves (See below):			
716,863	Current Cost Reserve	696,635		
125,979	Other Reserves	256,424		
842,842			953,059	
£2,099,347				£2,237,878

Current Cost Reserve

	£000's	£000's
Opening Balance		716,863
Balance Sheet Items – Revaluations:		
Cumulative to this year – Fixed Assets (incl. W.I.P.) – Note 2	557,760	
– Inventories – Note 3	(6,381)	
	551,379	
Less cumulative to last year – included in Opening Balance	(587,832)	(36,453)
Profit and Loss Account Items:		
Cost of Sales Adjustment	(11,755)	
Monetary Working Capital Adjustment	2,171	
Depreciation Adjustment	48,214	
	38,630	
Less: Gearing Adjustment	(22,405)	16,225
		£696,635

Other Reserves

	£000's	£000's
Total Reserves per Historical Balance Sheet		401,680
Net current cost adjustment to Profit and Loss Account – Cumulative to Last Year	(129,031)	
– This Year's Items	(16,225)	(145,256)
Other Reserves per Current Cost Balance Sheet		£256,424

Signed: Charles T. G. Dillon *Chairman*

Signed: P. J. Moriarty *Chief Executive*
D. Connaughton *Director, Finance*

8th July, 1986

NOTES ON AND FORMING PART OF THE CURRENT COST ACCOUNTS

Schedule P

1. **Introduction:**
The principles and method used in the calculation of the Current Cost Accounts (Schedules N. & O.) are in compliance with Statement of Standard Accounting Practice No. 16. Apart from the particular features covered in these notes the accounting policies, bases and methods are the same as in the Historical Cost Accounts.

The current cost system, while not a system of accounting for general inflation, takes account of price changes specific to a business in both Profit and Loss Account and Balance Sheet. It aims to determine, by means of certain adjustments to the historical cost results, the current cost profit or loss after allowing for the impact of price changes on the funds needed to maintain the productive assets of the business.

2. **Fixed Assets:**
Valuation of assets is based on indexation calculated by reference to the Transportable Goods Index issued by the Central Statistics Office as at March 1986 except for non specialised buildings which have been valued by a qualified internal valuer.

Fixed Assets and Work-in-Progress

31st March, 1986 Fixed Assets:	Gross £000's	Depreciation £000's	Net £000's	1985 Net £000's
Historical Value	1,556,442	436,946	1,119,496	739,223
Revaluation Change	1,763,232	1,232,148	531,084	512,277
Current Cost Value	£3,319,674	£1,669,094	£1,650,580	£1,251,500
Work-in-Progress:				
Historical Value			349,927	617,661
Revaluation Change			26,676	75,363
Current Cost Value			£376,603	£693,024
Current Cost Value of Fixed Assets and Work-in-Progress			£2,027,183	£1,944,524

3. **Net Current Assets:**

31st March, 1986	£000's	1985 £000's
Historical Value	156,506	77,548
Revaluation Change	(6,381)	192
Current Cost Value	£150,125	£ 77,740

4. **Depreciation:**
Total depreciation charged in the Current Cost Profit and Loss Account represents the current cost of the proportion of fixed assets consumed during the year. The depreciation adjustment of £48.214m. (£47.925m. in 1984/85) is the difference between the depreciation charge in the Historical Cost and Current Cost Accounts.

5. **Stocks and Cost of Sales Adjustment:**
Stocks are stated at value to the business at Balance Sheet date. The Cost of Sales adjustment is the difference between the replacement cost (at date of consumption) and the corresponding historical cost of stocks consumed. For fuel, the adjustment is the average replacement cost; for other stocks the adjustment uses an internal index based on actual input data.

6. **Monetary Working Capital Adjustment:**
The Monetary Working Capital Adjustment represents the additional monetary working capital required by a business as a consequence of price changes during the year in order to maintain its operations. Computation of the adjustment uses internal indices developed from the Board's actual recorded cost data.

7. **Gearing Adjustment:**
A proportion of the net operating assets of a business is financed by borrowings. The gearing adjustment dilutes the operating adjustments to reflect the effect of these borrowed funds. A gearing adjustment has been included as being reasonable in the overall context of the Board's financing.

Auditors' Report

As Auditors appointed by the Minister for Energy, with the consent of the Minister for Finance, we have audited the Profit and Loss Account, Balance Sheet and attached schedules A to M of the Electricity Supply Board, in accordance with approved auditing standards, and have obtained all the information and explanations which we considered necessary.

In our opinion, the Profit and Loss Account and Balance Sheet, together with the Statement of Source and Application of Funds (Schedule D), which have been prepared under the Historical Cost Convention, give, when read in conjunction with the relevant schedules and notes appearing thereon and the basis of accounting and principal accounting policies, a true and fair view of the results of the Board for the year ended 31st March, 1986 and of the state of the Board's affairs as at that date.

In our opinion, the Board has kept proper books with which the above mentioned financial statements are in agreement.

In our opinion, the supplementary current cost statement for the year ended 31st March, 1986, together with the notes thereon, as set out on Schedules N to P, have been properly prepared in accordance with the policies and methods described in the notes, to give the information required by Statement of Standard Accounting Practice No. 16.

1 Stokes Place,
St. Stephen's Green,
DUBLIN 2.
8th July, 1986

Stokes Kennedy Crowley & Co.,
Chartered Accountants

Statistical Supplement for year-ended 31st March 1986

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GROWTH OF ESB 1930-1986

Year ended 31st March	Units generated (and purchased)*	Units sold to Customers	Revenue from Electricity Sales	Average price per unit sold	Customers
	Millions	Millions	£000	Pence	Total
1930	60.9	43.2	478	1.108	48,606
1940	407.0	318.6	1,946	0.612	172,545
1950	784.8	626.1	4,774	0.763	310,639
1960	2,096.0	1,692.2	14,724	0.871	610,946
1970	5,245.7	4,411.6	39,400	0.892	786,500
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
1977	8,160.5	6,783.2	173,429	2.557	959,428
1978	8,828.4	7,329.9	210,029	2.865	986,256
1979	9,602.7	7,965.3	222,768	2.797	1,015,636
1980	10,213.6	8,560.3	300,024	3.505	1,043,428
1981	10,038.4	8,364.6	408,965	4.889	1,070,049
1982	10,385.9	8,661.7	517,029	5.969	1,096,950
1983	10,194.4	8,518.3	571,992	6.715	1,122,461
1984	10,559.2	8,903.5	641,460	7.205	1,145,818
1985	10,972.7	9,274.2	696,506	7.510	1,168,679
1986	11,465.1	9,787.8	757,172	7.736	1,194,765

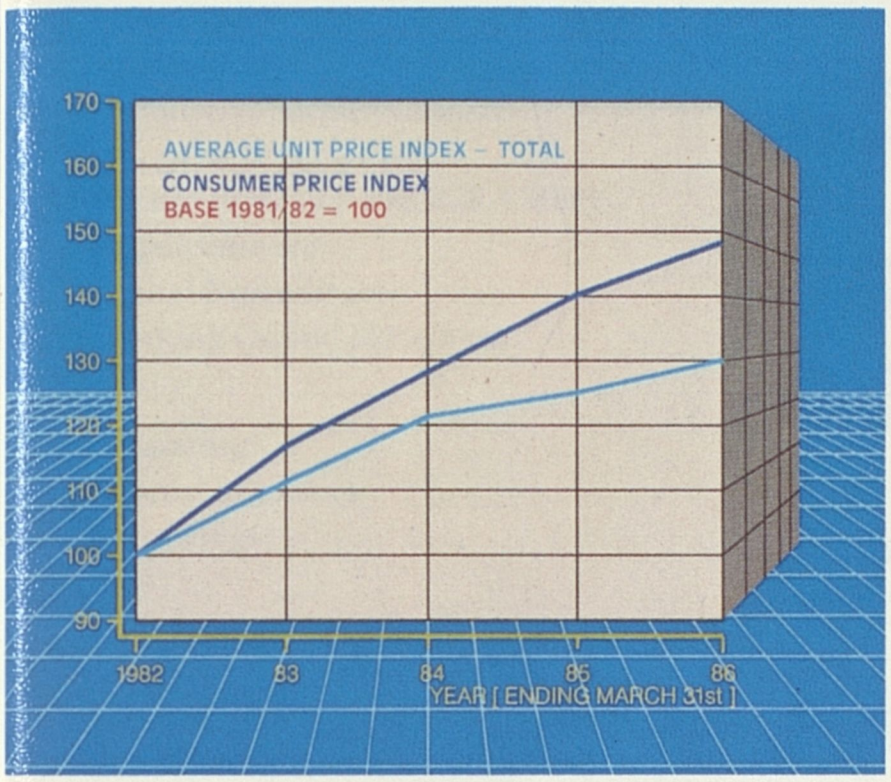
* Excluding Units absorbed by Storage Pumping

ELECTRICITY SALES
(Million Units)

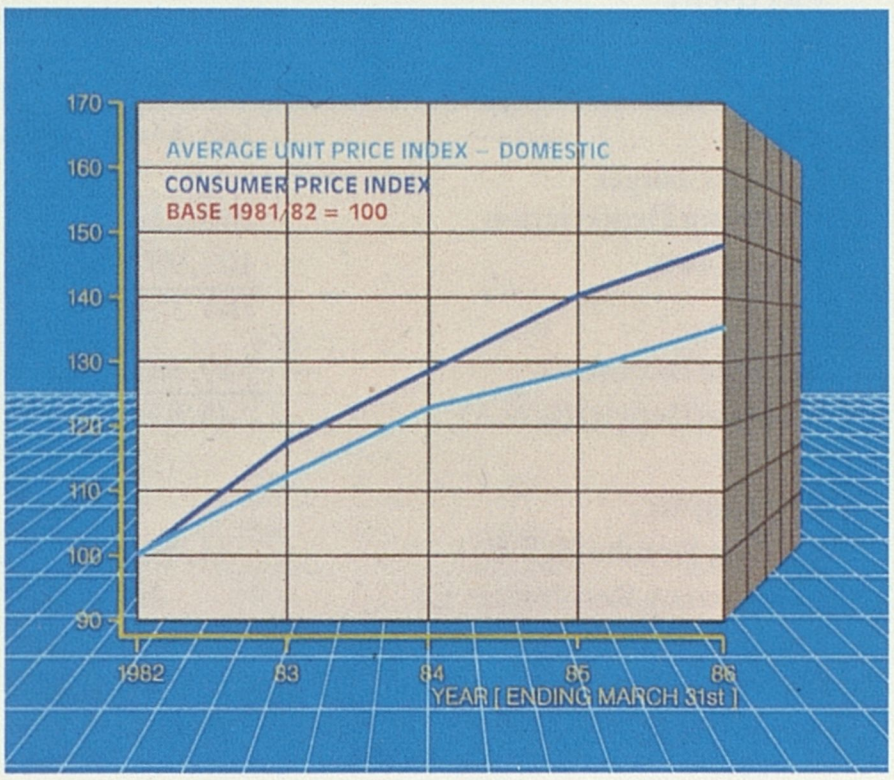
YEAR	DOMESTIC	COMMERCIAL	INDUSTRIAL	TOTAL
1976/77	2,906	1,385	2,493	6,783
1977/78	3,092	1,491	2,748	7,330
1978/79	3,404	1,624	2,938	7,965
1979/80	3,600	1,722	3,238	8,560
1980/81	3,515	1,774	3,076	8,365
1981/82	3,659	1,887	3,116	8,662
1982/83	3,599	1,911	3,009	8,518
1983/84	3,703	2,002	3,198	8,904
1984/85	3,795	2,074	3,405	9,274
1985/86	4,001	2,234	3,553	9,788

AVERAGE UNIT PRICE Vs. CPI

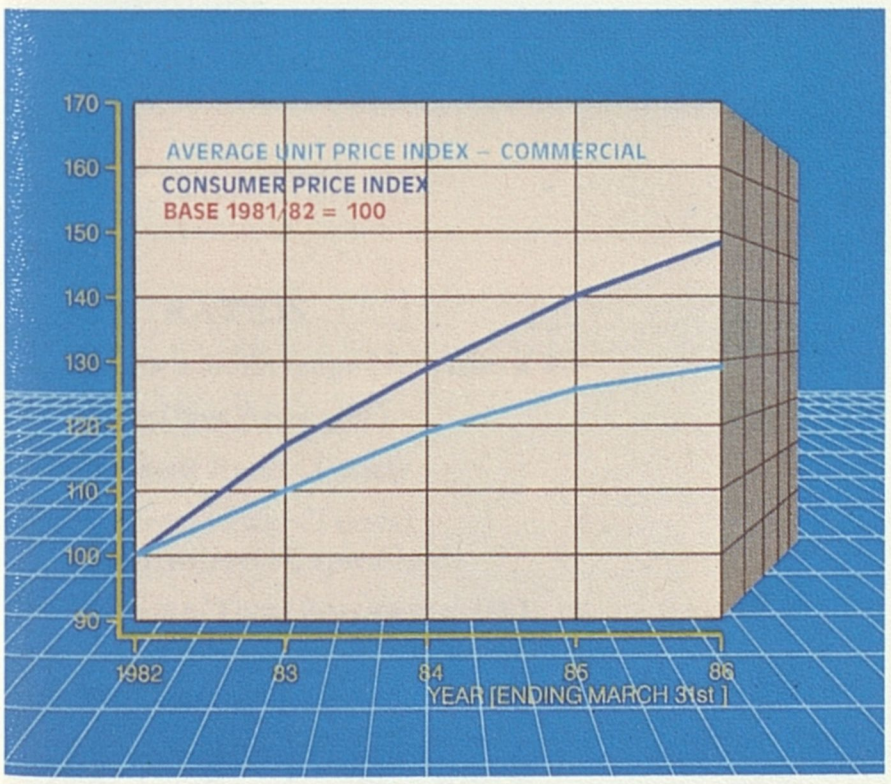
TOTAL



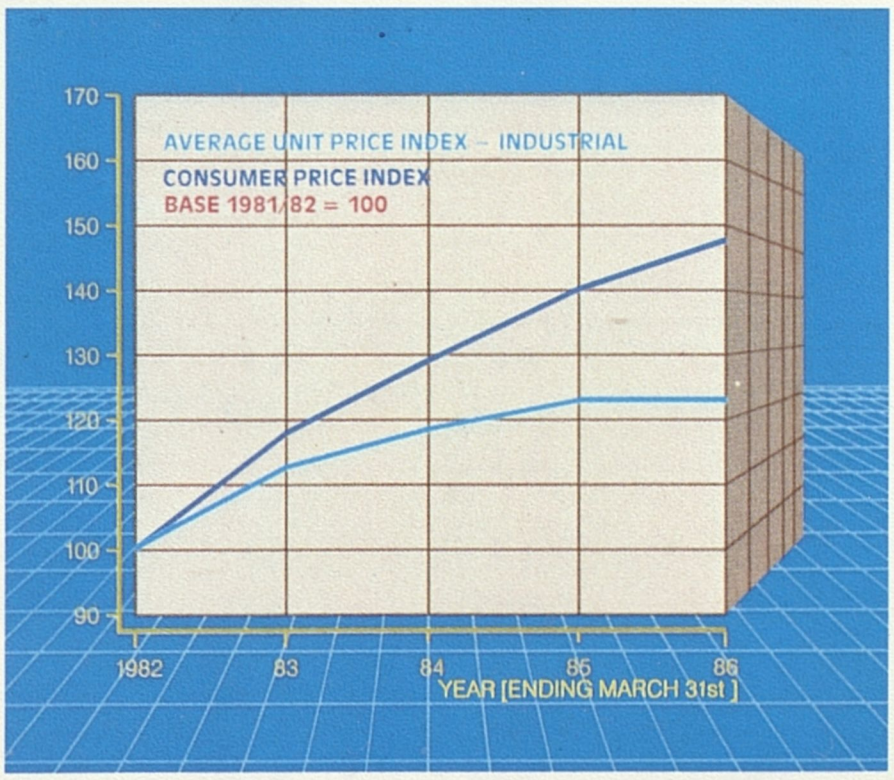
DOMESTIC



COMMERCIAL



INDUSTRIAL



SUMMARY OF ELECTRICITY AND TRADING FIGURES

	Year Ended 31st March, 1986 £000's	Year Ended 31st March, 1985 £000's
Electricity		
Expenditure:		
Fuel	299,782	303,013
Payroll	143,334	138,551
Capital Charges including Depreciation	220,254	193,527
Other Costs	101,987	89,433
	765,357	724,524
Revenue Income	759,483	698,386
Surplus/(Deficit) (Sch. A)	(5,874)	(26,138)
Trading etc.		
Trading Results (Sch. B)	(1,093)	(1,155)
Consultancy Result (Sch. C)	28	748
Expenses on New Borrowings	(727)	(473)
Result for all Activities	(7,666)	(27,018)

The result for the year increases the total deficit carried forward to 1986/87 to £72,115,000

5 YEAR SUMMARY – FINANCIAL STATISTICS AND KEY RATIOS
(On Historical Cost Accounting Basis)

FINANCIAL STATISTICS	1981/'82 £m.	1982/'83 £m.	1983/'84 £m.	1984/'85 £m.	1985/'86 £m.
OPERATIONS:					
Income	538	598	669	727	790
Expenditure	532	604	692	754	798
Surplus/(Deficit)	6	(6)	(23)	(27)	(8)
Cumulative Surplus/(Deficit)	(8)	(14)	(37)	(64)	(72)
FUNDING CAPITAL DEVELOPMENT PROGRAMME:					
Requirements:					
Capital Expenditure	210	241	227	240	172
Working Capital Movement	(4)	(14)	(34)	(32)	79
	206	227	193	208	251
Financing:					
Internal Resources	54	49	35	40	66
Borrowings	152	178	158	168	185
	206	227	193	208	251
SOURCES AND EMPLOYMENT OF CAPITAL:					
Sources:					
*Debt Liabilities Outstanding	750	916	1,052	1,179	1,224
Reserves	195	215	226	255	402
	945	1,131	1,278	1,434	1,626
Employment:					
Net Fixed Assets in Commission	500	608	704	739	1,119
Capital Works-in-Progress	287	380	465	618	350
Net Current Assets	158	143	109	77	157
	945	1,131	1,278	1,434	1,626
*Inclusive of Cumulative Currency Gain/(Loss)	(109)	(147)	(188)	(200)	(119)

KEY RATIOS					
Return on Average Net Assets(%)	11.6	9.9	9.0	8.9	10.5
Debt/Net Assets (%)	79.0	81.0	82.0	82.0	75.0
Current Ratio (Times)	2.1	1.9	1.5	1.4	2.0
Interest Cover (Times) (excl. interest Capitalised)	1.8	1.7	1.5	1.5	1.7
Foreign/Total Borrowings (%)	75.0	76.0	77.0	72.0	67.0
Internal Resources/ Cap. Expenditure (%)	26.0	20.0	16.0	17.0	39.0
Average Electricity Credit Period (Days from Date Billed)	26.5	26.2	26.0	27.3	30.1

STATEMENT OF BORROWINGS

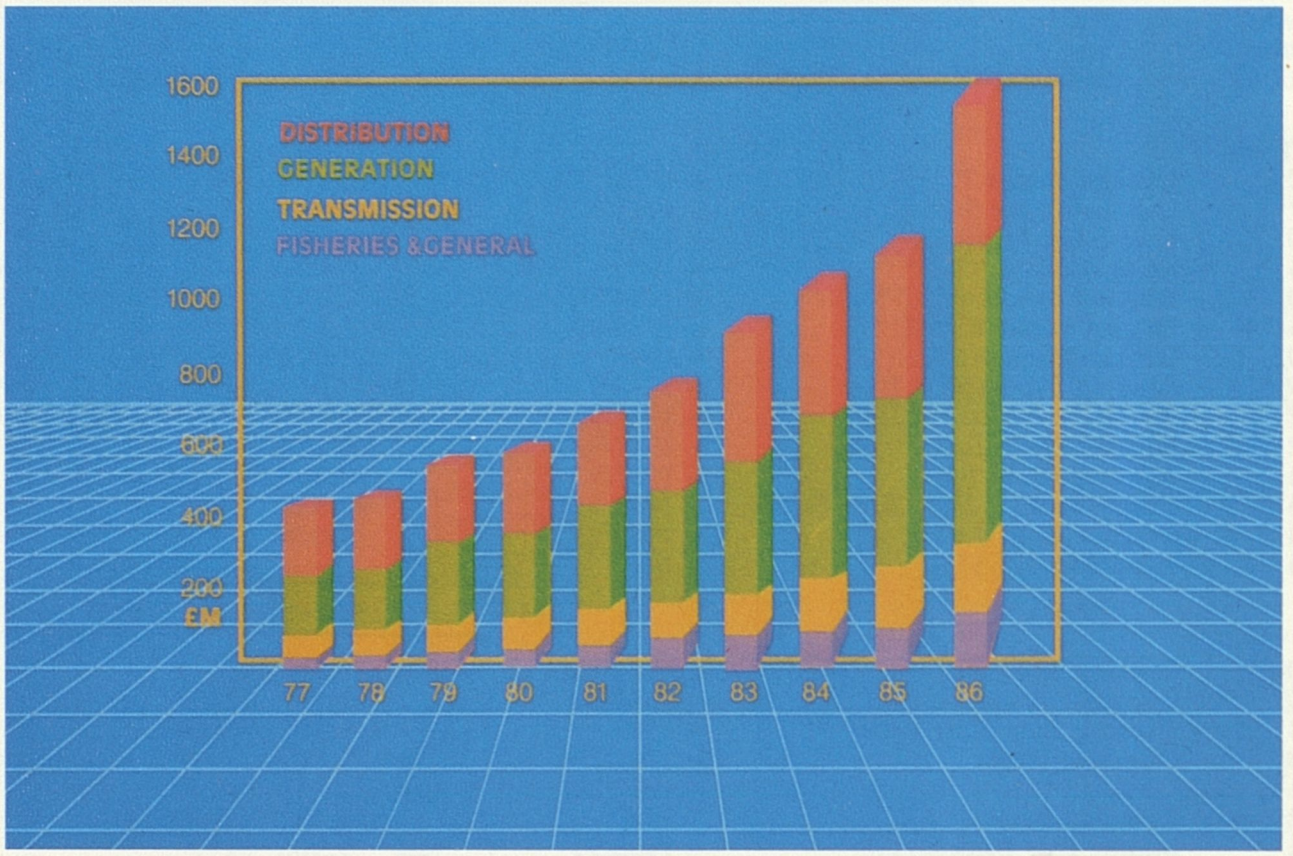
Amount Borrowed £000's	Year(s) of Borrowing				Balance Outstanding 31st March, 1985 £000's	Borrowed during year £000's	Redeemed during year £000's	Adjustment for currency changes £000's	Balance Outstanding 31st March 1986 £000's
Irish Pound Borrowings:									
68,450	1928-59	Advances	– Minister for Finance		36,131	–	1,836	–	34,295
500	1962	Loan	– New Ireland Assurance Co. Ltd. 6% – 1962/87		72	–	17	–	55
14,865	1972	Loan	– Central Bank of Ireland 7.25% – 1972/87		3,007	–	712	–	2,295
12,000	1962-63	Stock	– 6%	– 1982/87	2,733	–	–	–	2,733
16,500	1964-65	Stock	– 6%	– 1984/89	5,181	–	–	–	5,181
13,000	1966-67	Stock	– 7%	– 1986/91	4,538	–	–	–	4,538
7,000	1968	Stock	– 7.25%	– 1988/93	1,646	–	75	–	1,571
9,250	1970	Stock	– 9.5%	– 1985/90	3,215	–	–	–	3,215
12,000	1972	Stock	– 9%	– 1992/95	3,724	–	227	–	3,497
11,300	1975-76	Stock	– 13%	– 1983/85	5,021	–	5,021	–	–
16,800	1977	Stock	– 13%	– 1988	8,214	–	–	–	8,214
12,000	1978	Stock	– 13%	– 1990/92	8,646	–	–	–	8,646
16,500	1980	Stock	– 12%	– Premium (25%) 1985	13,977	–	13,977	–	–
21,000	1981	Stock	– 13%	– Premium (30%) 1986	18,417	–	–	–	18,417
14,000	1983	Stock	– 10%	– Premium (25%) 1988	13,648	–	–	–	13,648
20,000	1983	Stock	– 13.5%	– 2006/2008	19,779	–	–	–	19,779
35,000	1985	Stock	– 10%	– Premium (25%) 1991	–	35,000	–	–	35,000
761	1982-84	Project Finance		– 1982/87	407	–	174	–	233
					148,356	35,000	22,039	–	161,317
Floating Rate Facilities:									
25,500*	1978–85	– Domestic Banks		– 1981/92	11,500	6,000	1,125	–	16,375
30,000*	1981	– Domestic Banks		– 1987/89	30,000	–	–	–	30,000
15,000	1982	– Domestic Banks – Note Issue		– 1988	15,000	–	6,700	–	8,300
30,000*	1982	– Domestic Banks		– 1988/92	30,000	–	–	–	30,000
10,000*	1983	– Domestic Bank		– 1987/91	10,000	–	–	–	10,000
45,000*	1984	– Domestic Banks		– 1988/91	45,000	–	–	–	45,000
25,000*	1984	– Domestic Bank		– 1994	25,000	–	–	–	25,000
12,000*	1984	– Domestic Bank		– 1992/93	12,000	–	–	–	12,000
5,000*	1984	– Domestic Bank		– 1989/92	5,000	–	–	–	5,000
10,000	1984	– Domestic Banks		– 1990/92	10,000	–	1,000	–	9,000
10,000*	1984	– Domestic Bank		– 1989/92	10,000	–	–	–	10,000
25,000	1985	– Domestic Banks		– 1990/92	–	25,000	–	–	25,000
30,000*	1985	– Domestic Banks		– 1990/94	–	30,000	–	–	30,000
					203,500	61,000	8,825	–	255,675
000's		**Foreign Currency Borrowings:**							
Project Finance:									
IR£20,000*	1978	– European Investment Bank 9.2%		– 1983/98	32,456	–	1,141	(–) 5,359	25,956
IR£10,000*	1979	– European Investment Bank 9.35%		– 1983/99	14,472	–	484	(–) 1,431	12,557
IR£15,000*	1979	– European Investment Bank 9.45%		– 1983/99	22,378	–	892	(–) 1,915	19,571
IR£20,000*	1979	– European Investment Bank 9.45%		– 1983/99	29,840	–	1,190	(–) 2,551	26,099
IR£10,785*	1979	– European Investment Bank 8.45%		– 1985/94	12,985	–	1,308	391	12,068
IR£5,715*	1979	– European Investment Bank 12.0%		– 1985/96	11,738	–	314	(–) 2,571	8,853
IR£3,000*	1980	– European Investment Bank 8.75%		– 1984/95	3,555	–	257	118	3,416
IR£20,000*	1980	– European Investment Bank 8.75%		– 1985/95	24,496	–	940	848	24,404
IR£30,000*	1981	– European Investment Bank 7.65%		– 1986/96	36,828	–	–	1,508	38,336
IR£17,000*	1981	– European Investment Bank 9.3%		– 1985/2001	23,078	–	439	2,038	24,677
IR£22,000*	1981	– European Investment Bank 10.55%		– 1987/2001	26,911	–	–	1,359	28,270
IR£18,000*	1981	– European Investment Bank 14.0%		– 1987/2001	20,329	–	–	96	20,425
IR£16,000*	1982	– European Investment Bank 11.375%		– 1985/92	17,082	–	2,125	471	15,428
IR£20,000*	1982	– European Investment Bank 12.0%		– 1995/2002	18,954	–	–	(–) 1,245	17,709
IR£8,000*	1982	– European Investment Bank 7.0%		– 1986/94	9,247	–	–	379	9,626
IR£18,500*	1983	– European Investment Bank 6.4%		– 1988/98	18,418	–	–	754	19,172
IR£8,250*	1983	– European Investment Bank 6.5%		– 1984/95	7,609	–	587	297	7,319
IR£6,750*	1983	– European Investment Bank 12.15%		– 1989/98	6,655	–	–	17	6,672
IR£14,010*	1983	– European Investment Bank 10.4%		– 1989/98	14,114	–	–	182	14,296
IR£5,000*	1985	– European Investment Bank 9.4%		– 1990/2000	–	4,990	–	17	5,007
IR£15,000*	1986	– European Investment Bank 9.0%		– 1991/98	–	15,092	–	29	15,121
US$14,500*	1969-73	– I.B.R.D., Washington 6.5%		– 1974/94	9,253	–	703	339	8,889
US$20,000*	1971-76	– I.B.R.D., Washington 7.25%		– 1976/87	6,458	–	1,860	(–) 451	4,147
US$15,000*	1972-77	– I.B.R.D., Washington 7.25%		– 1977/88	5,246	–	1,299	(–) 194	3,753
US$40,005	1981-86	– Export-Import Bank of the United States 8.0%		– 1986/98	38,427	1,113	–	(–) 8,696	30,844
US$10,840	1981-82	– Export-Import Bank of the United States 8.375%		– 1983/91	8,053	–	1,264	(–) 1,565	5,224
US$20,036	1981-86	– Export-Import Bank of the United States 8.0%		– 1988/2000	19,592	237	–	(–) 4,381	15,448
F.Fr.376,961	1973-85	– French Banks		– 1977/2004	20,825	55	2,789	424	18,515
Stg.£25,322	1971-86	– United Kingdom Banks/Suppliers		– 1975/90	11,003	2,010	2,761	(–) 657	9,595
Sw.Fr.122,710	1981-85	– Swiss Export Agency		– 1986/97	41,779	4,962	22	1,808	48,527
IR£735*	1977-81	– Other Borrowings			210	–	105	1	106
					511,991	28,459	20,480	(–) 19,940	500,030

STATEMENT OF BORROWINGS

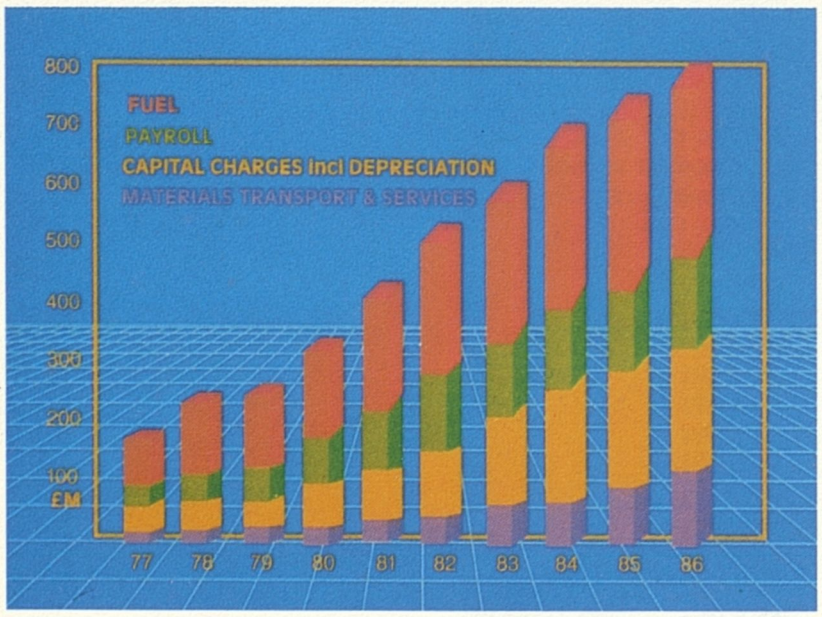
Amount Borrowed 000's	Year(s) of Borrowing	Foreign Currency Borrowings:		Balance Outstanding 31st March, 1985 £000's	Borrowed during year £000's	Redeemed during year £000's	Adjustment for currency changes £000's	Balance Outstanding 31st March, 1986 £000's
Fixed Rate Facilities:								
Registered Notes/Bonds and Bearer Bonds								
US$30,000	1972	– Japanese Banks 7.75%	– 1973/92	11,095	–	1,142,	(–) 2,397	7,556
US$12,000	1977	– U.S. Syndicate 9.25%	– 1983/92	9,510	–	987	(–) 2,046	6,477
US$10,000	1980	– U.S. Bank 11.375%	– 1985	9,906	–	9,848	(–) 58	–
Sw.Fr.50,000	1973	– Swiss Banks 4.625%	– 1985	19,004	–	19,612	608	–
Sw.Fr.25,000	1980	– Banking Syndicate 5.75%	– 1984/86	2,851	–	3,016	165	–
B.Fr.1,000,000	1973-74	– Belgian Banks 8.75%	– 1980/89	7,923	–	1,991	24	5,956
D.M.75,000	1980	– German Bank 8.5%	– 1988	24,042	–	–	784	24,826
D.M.150,000	1979	– Banking Syndicate 9.2%	– 1986/91	48,085	–	–	1,568	49,653
D.M.120,000	1982	– Banking Syndicate 9.75%	– 1983/92	30,774	–	3,875	906	27,805
Yen5,000,000	1982	– Japanese Bond Issue 9.1%	– 1987/92	19,708	–	–	1,765	21,473
Yen5,000,000	1983	– Japanese Banks 8.5%	– 1987/92	19,708	–	–	1,765	21,473
D.G.75,000	1983	– Dutch Banks – Note Issue 8.75%	– 1988	21,352	–	–	687	22,039
D.M.50,000	1984	– German Bank 8.05%	– 1988/93	16,028	–	–	523	16,551
Sw.Fr.50,000	1985	– Swiss Banks 5.375	– 1992	–	19,612	–	170	19,782
				239,986	19,612	40,471	4,464	223,591
Floating Rate Facilities:								
US$20,000*	1980-81	– Banking Syndicate	– 1984/87	16,840	–	5,440	(–) 2,919	8,481
US$20,000*	1980	– Domestic Banks	– 1984/88	15,849	–	3,204	(–) 3,393	9,252
US$20,000*	1981	– Floating Rate Note Issue	– 1987	19,812	–	–	(–) 4,392	15,420
Stg.£20,500*	1978	– Domestic Banks	– 1981/86	11,009	–	9,904	(–) 1,105	–
Can$30,000	1981	– Canadian Bank	– 1987/89	21,716	–	–	(–) 5,150	16,566
Can$25,000	1982	– Canadian Bank	– 1989	18,096	–	–	(–) 4,291	13,805
US$10,000	1983	– Middle East Bank	– 1988/91	9,906	–	–	(–) 2,196	7,710
Stg.£12,000	1983	– Sterling Acceptance Credit	– 1986	14,679	–	12,800	(–) 1,879	–
US$25,000*	1984	– Middle East Bank	– 1987/89	24,765	–	–	(–) 5,490	19,275
US$15,000*	1985	– Banking Syndicate	– 1989/91	–	14,859	–	(–) 3,294	11,565
US$15,000*	1985	– Domestic Bank	– 1988	–	14,859	–	(–) 3,294	11,565
US$10,000*	1985	– Domestic Bank	– 1987	–	9,848	–	(–) 2,138	7,710
Stg.£20,000*	1986	– Sterling Acceptance Credit	– 1992	–	21,333	–	1,524	22,857
				152,672	60,899	31,348	(–) 38,017	144,206
TOTAL – FOREIGN CURRENCY BORROWINGS				904,649	108,970	92,299	(–) 53,493	867,827
TOTAL – IRISH POUND BORROWINGS				351,856	96,000	30,864	–	416,992
TOTAL – ALL BORROWINGS				£1,256,505	£204,970	£123,163	(–)£53,493	£1,284,819

* Multi-Currency Facilities (Equivalent to amount of indicated currency at drawdown).

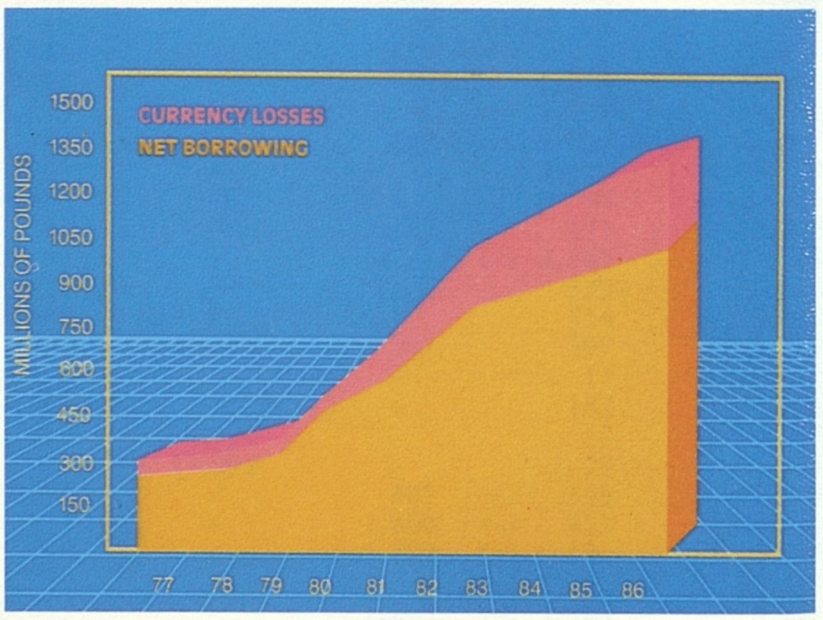
CUMULATIVE INVESTMENT IN FIXED ASSETS



REVENUE EXPENDITURE 1977–1986

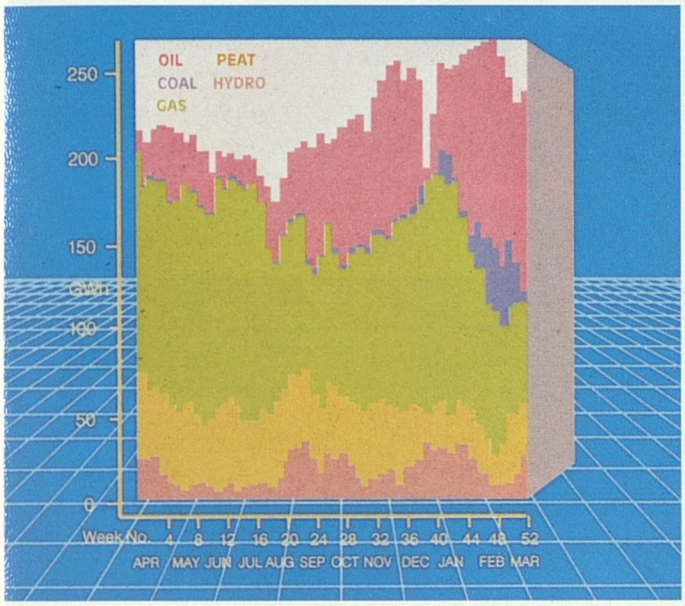


BORROWINGS OUTSTANDING AND ADVERSE CURRENCY MOVEMENTS

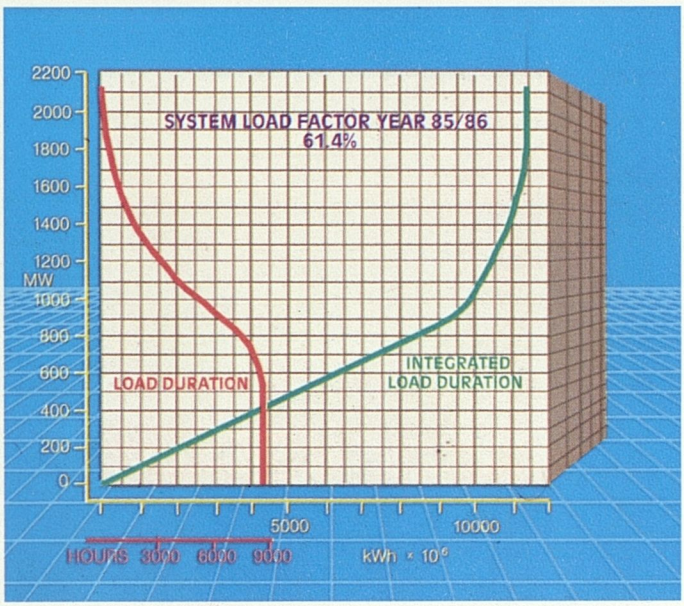


This graph shows adverse currency movements relative to total debt.

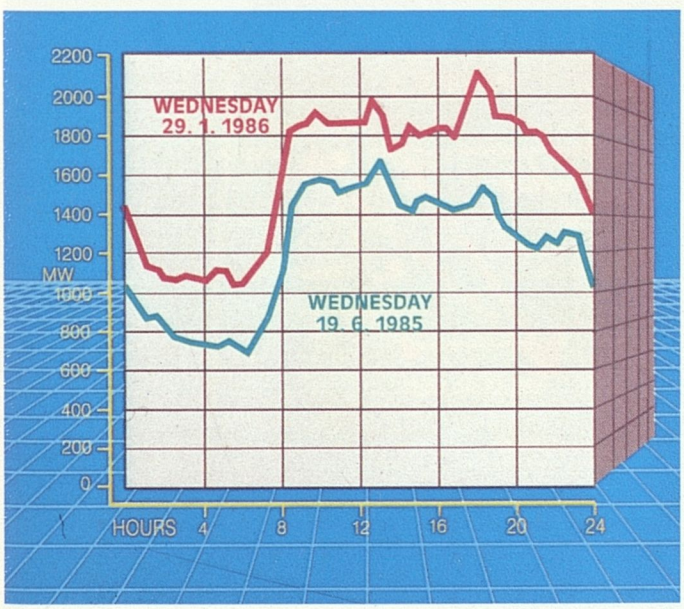
WEEKLY SYSTEM DEMAND 1985/86



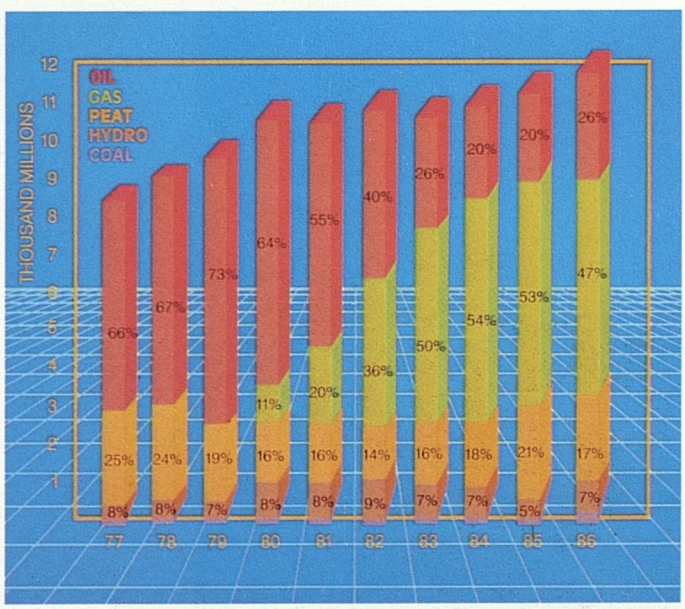
SYSTEM LOAD DURATION & INTEGRATED LOAD DURATION CURVES 1985/86



SYSTEM DAILY LOAD CURVES 1985/86



ENERGY SOURCES – UNITS GENERATED 1977 to 1986



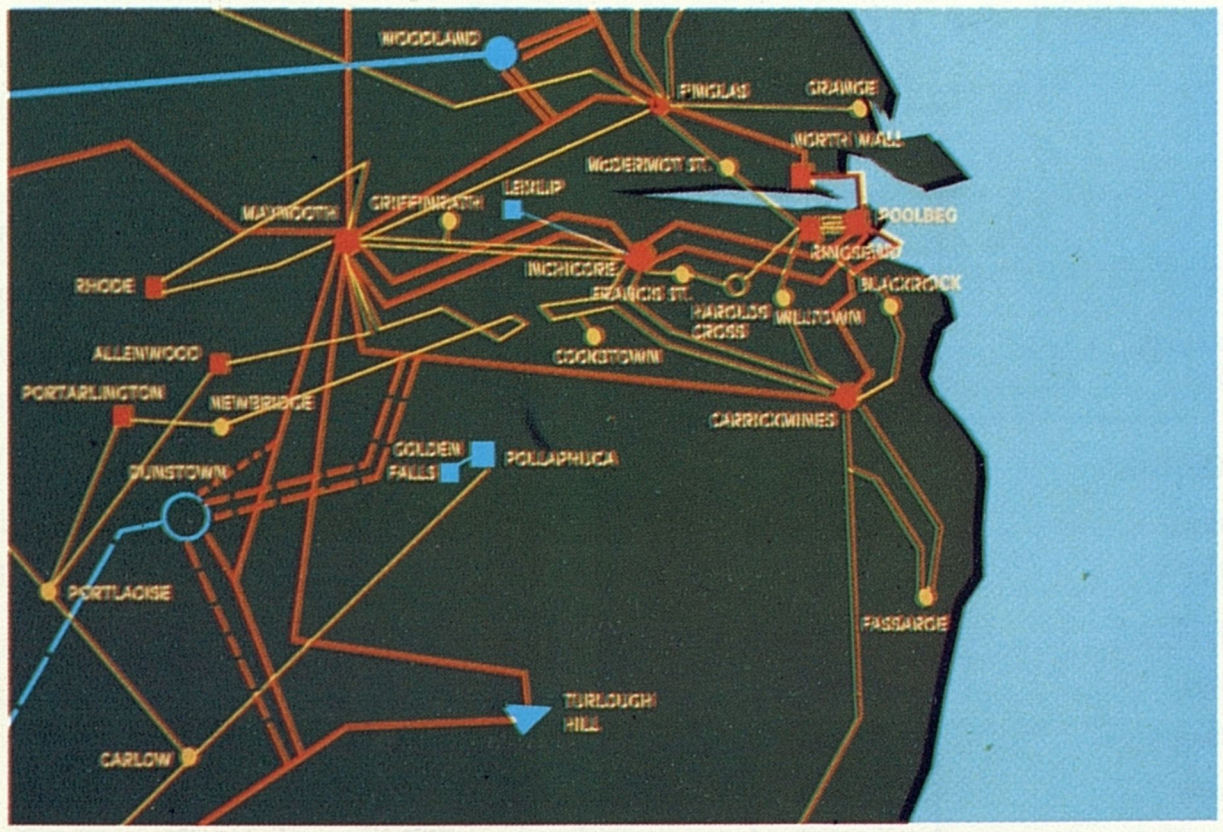
GENERAL OUTLINE OF THE

GENERATION AND TRANSMISSION SYSTEMS 31st MARCH 1986

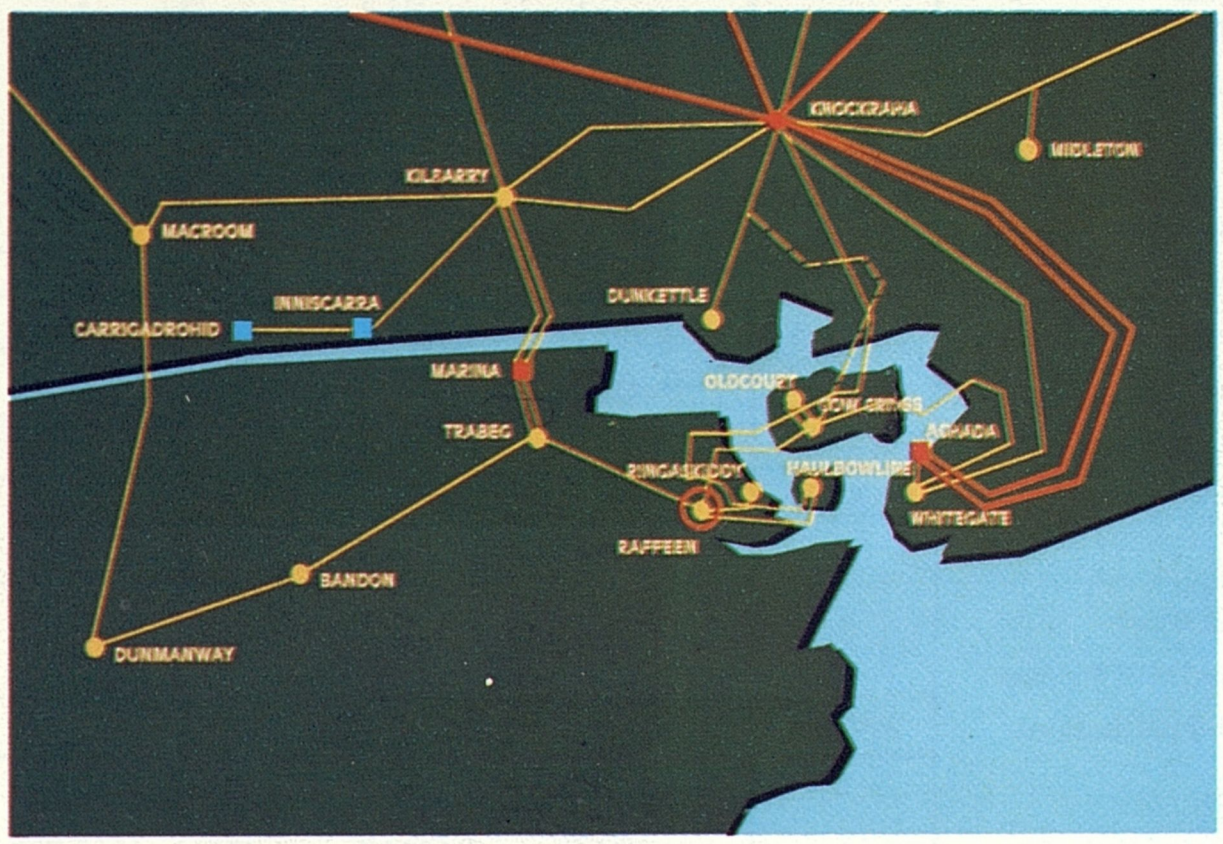
- HYDRO STATIONS
- STEAM STATIONS
- PUMPED STORAGE STATION
- 400kV TRANSFORMER STATIONS PROJECTED
- 400kV TRANSFORMER STATIONS
- 220kV TRANSFORMER STATIONS
- 220kV TRANSFORMER STATIONS PROJECTED
- 110kV TRANSFORMER STATIONS
- 110kV TRANSFORMER STATIONS PROJECTED
- 400kV LINES PROJECTED
- 220kV LINES
- 220kV LINES PROJECTED
- 110kV LINES
- 110kV LINES PROJECTED
- OTHER HIGH VOLTAGE LINES
- 275kV LINES

GWEEDORE
KILTROY
CLADY
LETTERKENNY
CATHALEEN'S FALL
CLIFF
TAWNAGHMORE
BELLACORICK
MOY
SLIGO
ARIGNA
LISDRUM
SHANKILL
TO N.I.E.S.
DUNDALK
CASTLEBAR
CARRICK – ON – SHANNON
LOUTH
FLAGFORD
RICHMOND
NAVAN
DRYBRIDGE
KNOCKUMBER
PLATIN
LANESBORO
SCREEB
MULLINGAR
CASHLA
ATHLONE
GALWAY
SHANNON BRIDGE
FERBANE
DERRYFRENCH
TYNAGH
INSET 1
ARKLOW
THURLES
SHELTON ABBEY
KILKENNY
INSET 3
CAHIR
DOON
BALLYDINE
CRANE
WEXFORD
BARRYMORE
MALLOW
ANNER
KNOCKERAGH
WATERFORD
GREAT ISLAND
BUTLERSTOWN
DUNGARVAN
CAHIRCIVEEN
INSET 2

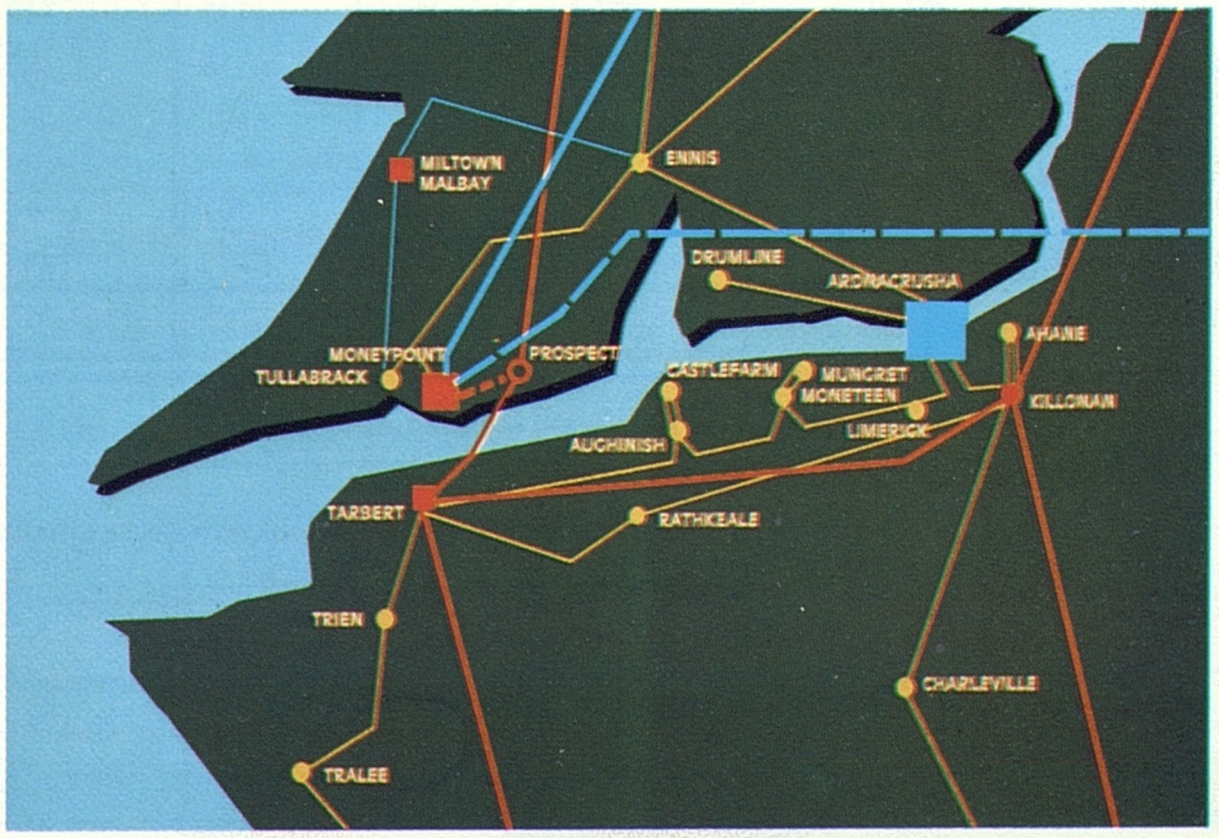
INSET 1



INSET 2



INSET 3



STATEMENT OF GENERATION COSTS

Generating Stations	Fuel	Operation	Maintenance	Local Charges	Works Cost		Depreciation	Total Cost	
	£000's	£000's	£000's	£000's	1985/1986 £000's	1984/1985 £000's	£000's	1985/1986 £000's	1984/1985 £000's
Coal/Oil/Gas									
Marina	22,352	2,020	2,069	412	26,853	26,119	842	27,695	26,985
Arigna	3,436	730	353	99	4,618	3,602	6	4,624	3,613
Great Island	11,705	1,613	1,490	425	15,233	18,578	883	16,116	19,458
Tarbert	64,168	1,758	3,225	587	69,738	81,026	3,101	72,839	84,136
Poolbeg	65,549	2,878	4,744	1,290	74,461	51,123	5,747	80,208	56,310
Aghada	35,026	1,584	3,050	514	40,174	56,661	8,443	48,617	65,090
North Wall	28,527	1,162	1,840	411	31,940	29,612	3,278	35,218	32,682
Moneypoint	7,853	1,933	1,183	803	11,772	*	1,976	13,748	*
Sod Peat (Machine)									
Portarlington	1,501	1,000	818	158	3,477	3,878	7	3,484	3,887
Allenwood	3,411	1,381	980	233	6,005	6,256	9	6,014	6,265
Milled Peat									
Ferbane	9,751	2,210	1,953	371	14,285	17,871	20	14,305	17,895
Rhode	12,676	1,701	1,940	307	16,624	13,548	19	16,643	13,573
Bellacorick	6,714	1,236	1,372	309	9,631	9,526	210	9,841	9,733
Shannonbridge	14,207	1,968	2,034	352	18,561	21,192	2,184	20,745	23,409
Lanesborough	11,919	1,600	1,178	255	14,952	15,715	2,155	17,107	17,695
Sod Peat (Hand Won)									
Three 5MW Stations	598	769	517	176	2,060	2,693	19	2,079	2,698
Total–Fuel Stations	299,393	25,543	28,746	6,702	360,384	357,400	28,899	389,283	383,429
Hydro									
Shannon		981	1,645	375	3,001	2,692	42	3,043	2,736
Erne		434	723	216	1,373	1,344	144	1,517	1,489
Liffey		127	562	92	781	636	34	815	670
Lee		288	344	115	747	681	80	827	761
Clady		72	97	18	187	193	22	209	214
Pumped Storage									
Turlough Hill		603	534	207	1,344	1,558	644	1,988	2,203
Total–Hydro Stations		2,505	3,905	1,023	7,433	7,104	966	8,399	8,073
Total–All Stations	299,393	28,048	32,651	7,725	367,817	364,504	29,865	397,682	391,502
Electricity Purchased in bulk(net)								389	268
General Charges								22,460	19,155
Costs (current and remaining) of Stations now decommissioned								3,533	5,417
Fisheries (Net Cost before Amortisation)								630	817
TOTAL COST								£424,694	£417,159

Note: Station works cost per unit sent-out is included with the Generating Statistics under the heading "Particulars and Performance of Generating Plant"

* Recently commissioned

INSTALLED CAPACITY

YEAR	MW	YEAR	MW
1976/77	2,290	1981/82	3,287
1977/78	2,540	1982/83	3,175
1978/79	2,895	1983/84	3,260
1979/80	2,863	1984/85	3,247
1980/81	3,117	1985/86	3,547

PERCENTAGE INSTALLED CAPACITY ANALYSED BY FUEL

YEAR	OIL	PEAT	HYDRO	COAL	GAS
1976/77	57	20	22	1	–
1977/78	62	18	20	1	–
1978/79	59	15	18	1	7
1979/80	59	16	18	1	7
1980/81	54	14	16	–	15
1981/82	51	14	16	–	20
1982/83	46	15	16	–	23
1983/84	27	15	16	–	41
1984/85	24	15	16	–	45
1985/86	22	14	14	9	41 *

Note: Due to rounding up, percentages do not necessarily total 100

* Of the plant classified as Gas, 16% can also burn Oil

PERCENTAGE PLANT FORCED OUTAGE RATE

YEAR	%	YEAR	%
1976/77	16.9	1981/82	11.4
1977/78	11.8	1982/83	12.1
1978/79	22.5	1983/84	8.0
1979/80	21.3	1984/85	6.2
1980/81	15.9	1985/86	12.3

THERMAL EFFICIENCY PERCENTAGE

(of Conversion of Primary Energy to Electricity)

	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86
GAS	–	–	–	34.6	36.0	37.0	35.1	37.3	38.7	38.7
OIL	34.5	35.9	35.2	36.1	35.8	35.8	34.6	35.2	36.5	36.2
MILLED PEAT	25.4	25.2	24.0	23.7	23.4	23.0	23.8	24.0	25.2	24.8
SOD PEAT	23.2	23.0	23.5	21.5	20.8	20.0	21.2	21.5	22.6	22.0
OVERALL:	31.1	32.0	32.1	32.9	32.4	33.2	32.1	33.3	34.2	34.4

STATION STAFF NUMBERS PER MW OF INSTALLED CAPACITY

YEAR	PEAT	OIL	GAS
1976/77	2.25	0.65	–
1977/78	2.26	0.69	–
1978/79	2.29	0.58	–
1979/80	2.39	0.61	1.02
1980/81	2.49	0.60	0.66
1981/82	2.67	0.61	0.54
1982/83	2.46	0.62	0.48
1983/84	2.21	0.51	0.45
1984/85	2.20	0.50	0.45
1985/86	2.04	0.59	0.45

AGE OF GENERATING PLANT 31/3/1986

Age / Fuel Type	Under 5 Years MW	5 to 10 Years MW	10 to 15 Years MW	15 to 20 Years MW	20 to 25 Years MW	25 to 30 Years MW	Over 30 Years MW	Total MW
Oil	–	500	120	148	–	–	–	768
Peat	90	40	–	40	150	115	52	487
Gas	505*	655*	240	–	60	–	–	1460
Hydro	–	1	292	–	–	31	188	512
Coal	305	–	–	–	–	15	–	320
Total MW	900	1196	652	188	210	161	240	3547

* Combined Cycle plant at Marina and North Wall uses new heat recovery boilers to drive refurbished turbines.

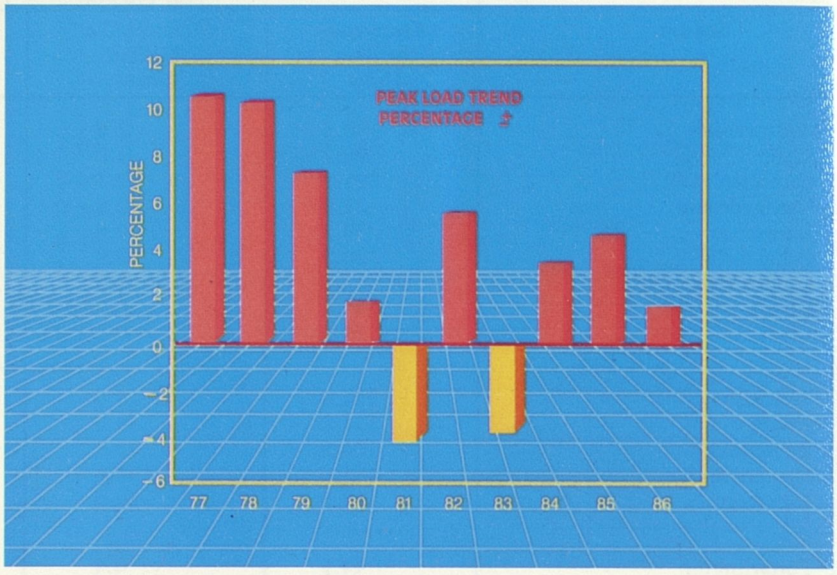
GENERATION STATISTICS FOR THE YEAR 1985/86

Station	Year 1985/86			Year 1984/85
	Generated Million Units	Station Use Million Units	Sent Out Million Units	Sent Out Million Units
Ardnacrusha	390.3	2.8	387.5	253.5
Cliff	90.2	1.0	89.2	57.0
Cathaleen's Fall	225.9	2.1	223.8	144.7
Carrigadrohid	21.0	0.5	20.5	16.4
Inniscarra	59.2	0.8	58.4	45.4
Pollaphuca	20.9	0.9	20.0	9.8
Golden Falls	7.7	0.2	7.5	4.4
Leixlip	14.8	0.2	14.6	7.6
Clady	17.6	0.1	17.5	11.5
Ferbane	274.8	25.9	248.9	367.4
Rhode	394.0	34.2	359.8	301.0
Bellacorick	204.8	15.5	189.3	223.3
Shannonbridge	485.0	47.6	437.4	565.5
Lanesboro	438.5	39.0	399.5	468.1
Portarlington	44.9	4.4	40.5	43.5
Allenwood	114.1	8.4	105.7	115.5
Cahirciveen	8.1	1.0	7.1	14.1
Screeb	0	0.1	- 0.1	3.7
Gweedore	7.0	0.8	6.2	9.1
Marina	949.6	16.9	932.7	947.4
Aghada	1,475.0	59.5	1,415.5	2,159.7
Poolbeg	2,634.0	130.3	2,503.7	1,648.7
North Wall	1,252.4	20.9	1,231.5	1,174.9
Moneypoint	250.6	33.9	216.7	–
Great Island	317.7	16.0	301.7	299.9
Tarbert	1,878.3	111.1	1,767.2	1,675.4
Arigna	77.5	5.1	72.4	57.0
Turlough Hill (generation)	333.5	5.1	328.4	349.4
Turlough Hill (pumping)	- 533.9	–	533.9	556.5
ESB Import	–	–	–	–
ESB Export	–	–	–	–
Purchased	11.6	–	11.6	8.8
System Demand	11,465.1	584.3	10,880.8	10,426.2
Maximum Daily Generation - Million Units			40.8	40.2
Maximum Load Generated in MW			2130	2092

Note: System demand is total units generated by all stations including Turlough Hill plus ESB Import and units purchased, less Turlough Hill pumping and ESB Export.

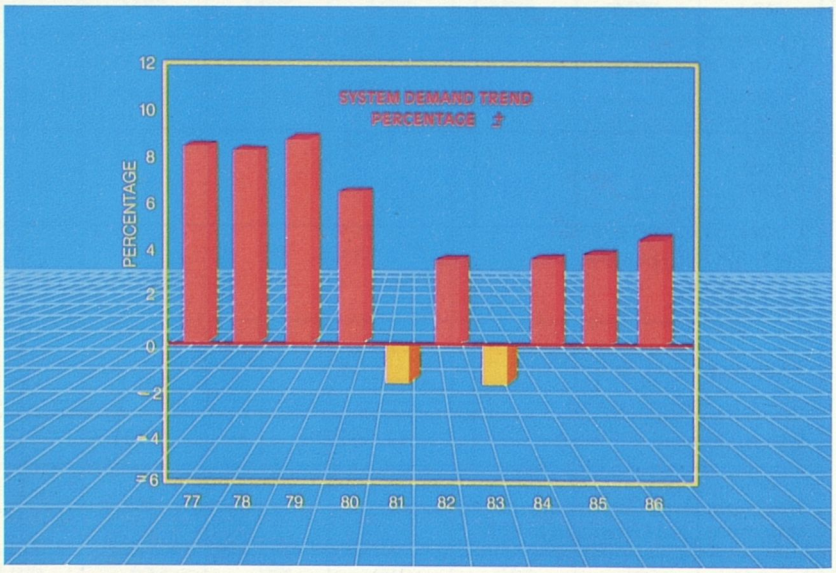
PEAK LOAD TRENDS

YEAR	MW
1976/77	1,634
1977/78	1,802
1978/79	1,934
1979/80	1,971
1980/81	1,892
1981/82	1,999
1982/83	1,924
1983/84	1,994
1984/85	2,092
1985/86	2,130



SYSTEM DEMAND TRENDS

YEAR	Million Units
1976/77	8,161
1977/78	8,828
1978/79	9,603
1979/80	10,214
1980/81	10,038
1981/82	10,386
1982/83	10,194
1983/84	10,559
1984/85	10,973
1985/86	11,465



PARTICULARS AND PERFORMANCE OF GENERATING PLANT

Thermal Stations

Station	Plant Particulars					Plant Performance for year ended 31.3.'86			
	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/hr.	Fuel Type				
Bellacorick	2	40	2	191	Milled Peat	189.3	58.6	3.547	5.088
Ferbane A	3	60	3	300	Milled Peat	105.5	22.7	4.697	7.275
Ferbane B	1	30	1	130	Milled Peat	143.4	59.5	3.344	4.608
Shannonbridge	3	125	3	522	Milled Peat	437.4	44.4	3.248	4.243
Lanesboro	2	85	2	349	Milled Peat	399.5	59.1	2.983	3.742
Portarlington	1	12	3	205	Sod Peat	40.5	42.8	3.710	8.594
Allenwood	2	40	4	273	Sod Peat	105.7	32.7	3.228	5.683
Cahirciveen	1	5	1	28	Sod Peat	7.1			
Gweedore	1	5	1	28	Sod Peat	6.2	11.6	4.547	15.663
Screeb	1	5	1	28	Sod Peat	-0.1			
Rhode A	2	40	2	191	Milled Peat	145.1	45.4	3.958	5.319
Rhode B	1	40	1	173	Milled Peat	214.7	67.4	3.229	4.148
Moneypoint #	1	305	1	936	Coal	216.7	18.1	3.624	5.433
Arigna	1	15	1	75	Coal	72.4	59.2	4.746	6.378
Great Island	3	240	3	853	Oil	301.7	15.2	3.880	5.049
Marina	1	60	1	250	Gas/Oil	932.7	24.6	2.396	2.879
	1	30	1	132	HR**		81.7		
	1	85	Combustion Turbine		Gas				
Aghada	1	270	1	800	Gas	1415.5	50.5	2.475	2.838
	3	255	Combustion Turbines		Gas/Oil		12.8		
Poolbeg	3	510	3	1560	Gas/Oil	2503.7	56.0	2.618	2.974
	2	28	Combustion Turbines		Oil				
Tarbert	2	500	2	1600	Oil	1767.2	43.0	3.631	3.946
North Wall	1	104	Combustion Turbine		Gas/Oil	1231.5	18.8	2.316	2.593
	3	42	1	174	HR**		84.8		
	1	104	Combustion Turbine		Gas/Oil				

Excludes plant decommissioned as of the end of the year : Ringsend 270MW, Tarbert 120MW, Marina 30MW.
: Lanesboro 20MW, Portarlington 25MW, Miltown Malbay 5MW.

* Works cost per unit is affected by items such as load factor and load profile; the figures in this column cannot, therefore, be used directly for comparing station performances.

** Heat Recovery: Operated on combined cycle with associated combustion turbine.

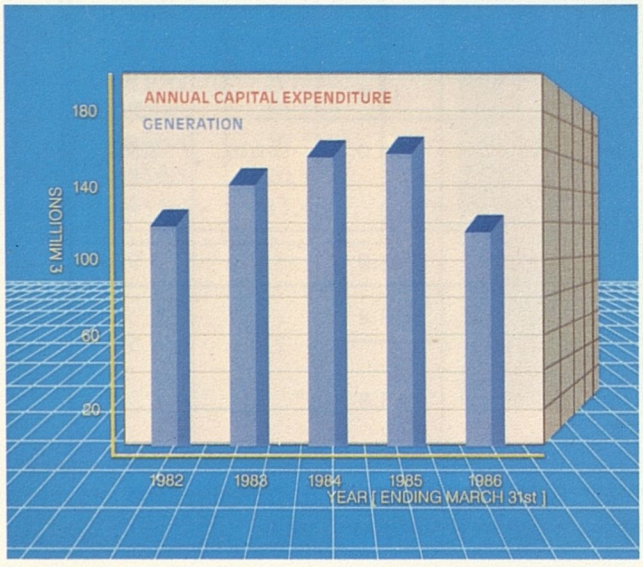
\# In commission for part of the year only.

PARTICULARS AND PERFORMANCE OF GENERATING PLANT

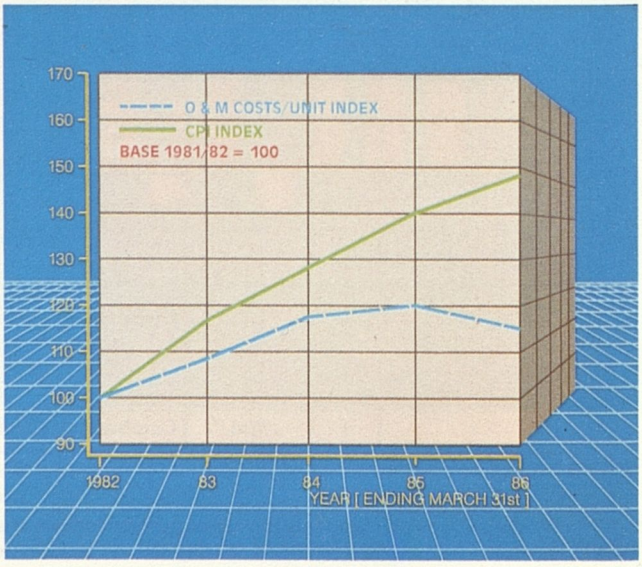
Hydro Stations

Station	Average Annual generation million units	Plant Particulars		Plant Performance for year ended 31.3.'86		
		Generating Sets		Units sent out millions	Plant load factor %	Works cost per unit sent out (pence)
		No.	Capacity (MW)			
Ardnacrusha	315	5	86	387.5	52.0	0.775
Pollaphuca	45	2	30	20.0	8.0	1.851
Golden Falls		1	4	7.5	22.0	
Leixlip		1	4	14.6	42.4	
Cliff	275	2	20	89.2	51.6	0.439
Cathaleen's Fall		2	45	223.8	57.5	
Carrigadrohid	77	1	8	20.5	30.1	0.946
Inniscarra		2	19	58.4	35.7	
Clady	13	1	4	17.5	50.4	1.072
Turlough Hill - Pumped Storage	–	4	292	328.4	–	–

ANNUAL CAPITAL EXPENDITURE



OPERATION & MAINTENANCE COSTS PER UNIT SOLD Vs. CPI



TRANSMISSION SYSTEM AT 31st MARCH 1986

Stations

Transformer/Switching Stations	No. in Commission	Increase for Year	Total Capacity in kVA	Increase in Capacity for Year in kVA
400 kV Stations	2	+ 2	330,000 at 17/400 kV 500,000 at 400/220 kV	+ 330,000 + 500,000
220 kV Stations	16	Nil	600,000 at 275/220 kV 4,003,000 at 220/110 kV 1,180,000 at 20/220 kV 420,000 at 13/220 kV 1,072,000 at 10/220 kV 693,000 at 110/38 kV 412,000 at 10/110 kV 20,000 at 110/6kV	Nil + 500,000 Nil Nil Nil Nil Nil Nil
110 kV Stations	79	+ 1	2,994,000 at 110/38 kV 156,500 at 110/10 kV 40,000 at 110/6kV 112,400 at 38/10 kV 1,191,500 at 10/110 kV 88,000 at 10/38/110 kV 5,000 at 10/38 kV	− 15,000 + 20,000 Nil Nil Nil Nil Nil

Lines and Cables

Lines and Cables	Length km.	Increase for Year km.	Description
400 kV Lines	229.2	+ 229.2	3 x twin 600 sq. mm. single circuit SCA
275 kV Lines	10.5	Nil	6 x twin 485 sq. mm. double circuit SCA
220 kV Lines	82.6	+ 14.6	6 x 600 sq. mm. double circuit SCA
220 kV Lines	1041.1	Nil	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	Nil	6 x 95 sq. mm. double circuit copper
110 kV Lines	40.9	− 7.4	3 x 95 sq. mm. single circuit copper
110 kV Lines	109.6	Nil	6 x 200 and 6 x 300 sq. mm. double circuit SCA
110 kV Lines	3487.2	+ 7.6	3 x 200 to 3 x 425 sq. mm. single circuit SCA
400 kV Cables	0.6	+ 0.6	Oil filled
220 kV Cables	19.2	Nil	High pressure oil pipe-type
220 kV Cables	44.3	Nil	Oil filled
110 kV Cables	43.6	− 0.2	Oil filled
110 kV Cables	38.8	+ 13.2	Pipe compression
110 kV Cables	1.6	Nil	Cross-linked polyethylene

TRANSMISSION CAPACITY TRENDS

Station Capacity in kVA – Cumulative Data

YEAR	110kV	220kV	400kV
1976/77	4,241,900	4,607,000	–
1977/78	4,276,900	4,607,000	–
1978/79	3,991,900	5,202,000	–
1979/80	4,150,900	5,952,000	–
1980/81	4,475,400	6,262,000	–
1981/82	4,664,400	6,887,000	–
1982/83	4,508,900	7,682,000	–
1983/84	4,556,900	7,900,000	–
1984/85	4,582,400	8,400,000	–
1985/86	4,587,400	8,400,000	830,000

TRANSMISSION CAPACITY TRENDS

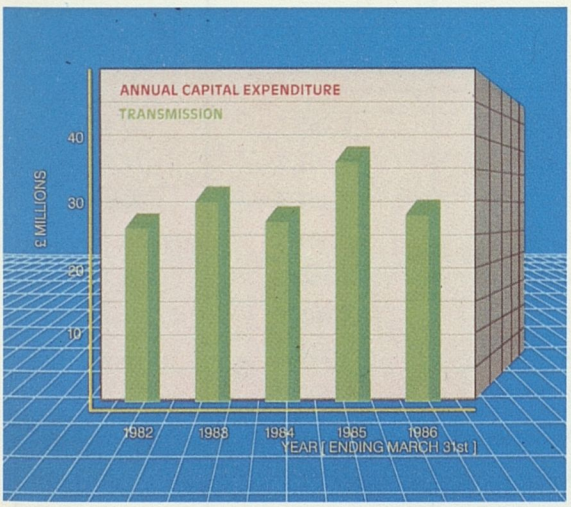
Kilometres of Lines/Cables – Cumulative Data

YEAR	110kV	220kV	275kV	400kV
1976/77	3,382.4	924.4	10.5	–
1977/78	3,390.5	1,067.4	10.5	–
1978/79	3,401.2	1,180.2	10.5	–
1979/80	3,411.7	1,180.2	10.5	–
1980/81	3,430.8	1,313.6	10.5	–
1981/82	3,476.4	1,424.2	10.5	–
1982/83	3,546.2	1,427.2	10.5	–
1983/84	3,668.6	1,453.3	10.5	–
1984/85	3,710.3	1,453.3	10.5	0.6
1985/86	3,723.5	1,467.9	10.5	229.8

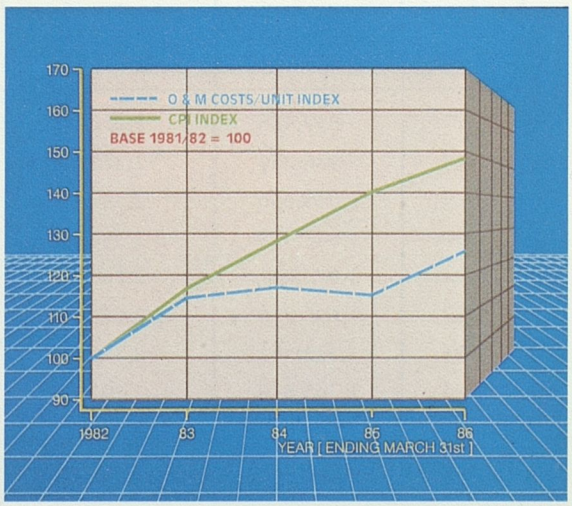
PLANT AVAILABILITY – TRANSMISSION

Year	Availability (%)
1976/77	95.6
1977/78	94.9
1978/79	96.5
1979/80	96.4
1980/81	97.3
1981/82	95.4
1982/83	96.4
1983/84	97.0
1984/85	97.4
1985/86	95.3

ANNUAL CAPITAL EXPENDITURE



OPERATION & MAINTENANCE COSTS PER UNIT SOLD Vs. CPI



DISTRIBUTION SYSTEM IN COMMISSION AT 31st MARCH 1986
(Including Rural Networks)

Transformer Station	No. In Commission	Increase (+) or Decrease (-) for Year	Total Capacity in kVA	Increase (+) or Decrease (-) for Year in kVA
38kV Stations	382	2	2,859,900	31,200
10kV Stations excluding U.R.D.	128,242	3,117	4,001,308	134,390
10kV Stations U.R.D.	1,881	1	108,686	50
5kV Stations	6	-1	900	Nil

Distribution Lines & Cables	Length km	Increase (+) or Decrease (-) for Year km	Description
38kV Lines	5631.1	38.0	3 x 25 to 3 x 300 sq.mm copper and single core aluminium
38kV Cables	298.3	0.6	3 x 95 to 3 x 680 sq.mm copper and aluminium
10kV Lines	75,338.4	728.0	Single and Three Phase
10kV & 5kV Cables	3,281.5	93.6	2 x 16 to 3 x 240 sq.mm copper and aluminium
3.3kV Cables	3.7	Nil	3 x 185 sq.mm

DISTRIBUTION SYSTEM TRENDS – CUMULATIVE DATA

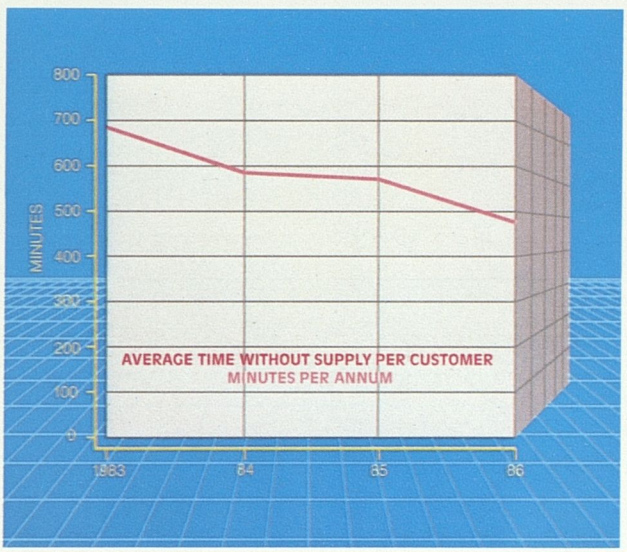
YEAR	NO. OF CUSTOMERS	TRAFOS		LINES (km)	
		38kV (kVA)	10kV (kVA)	38kV	10kV
76/77	959,428	2,202,300	2,925,900	5,288.7	70,460.1
77/78	986,256	2,255,900	3,022,000	5,361.7	71,545.3
78/79	1,015,636	2,309,900	3,137,100	5,444.4	72,586.7
79/80	1,043,428	2,398,900	3,270,000	5,501.5	73,583.7
80/81	1,070,049	2,523,100	3,369,881	5,566.3	74,344.7
81/82	1,096,950	2,647,300	3,563,530	5,645.5	75,171.1
82/83	1,122,461	2,716,700	3,683,911	5,714.7	76,042.3
83/84	1,145,818	2,792,500	3,843,827	5,807.2	76,850.5
84/85	1,168,679	2,828,700	3,976,454	5,890.8	77,802.0
85/86	1,194,765	2,859,900	4,110,894	5,929.4	78,623.6

FREQUENCY RANGE
(Hertz)

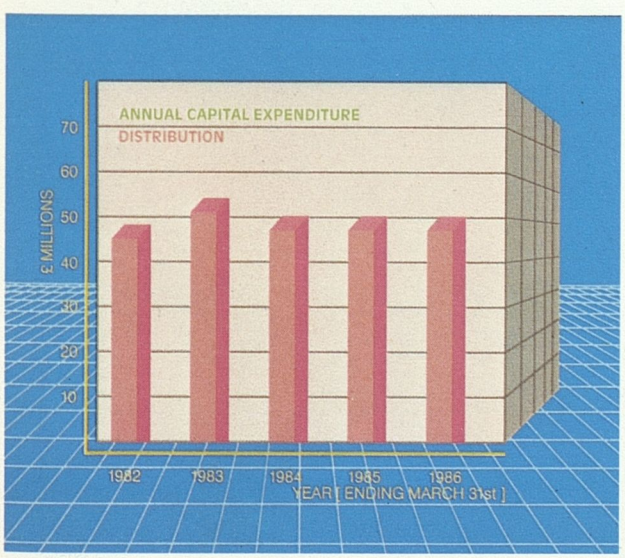
YEAR	FREQUENCY RANGE
1976/77	49.84 to 50.16
1977/78	49.86 to 50.14
1978/79	49.78 to 50.22
1979/80	49.79 to 50.21
1980/81	49.84 to 50.16
1981/82	49.82 to 50.18
1982/83	49.79 to 50.21
1983/84	49.78 to 50.22
1984/85	49.80 to 50.20
1985/86	49.82 to 50.18

The frequency was maintained within the range shown for 95% of the time.

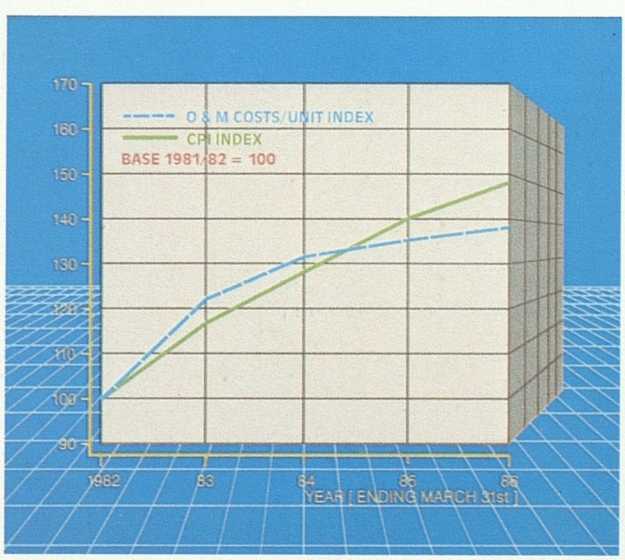
SUPPLY CONTINUITY



ANNUAL CAPITAL EXPENDITURE



OPERATION & MAINTENANCE COSTS PER UNIT SOLD Vs. CPI



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