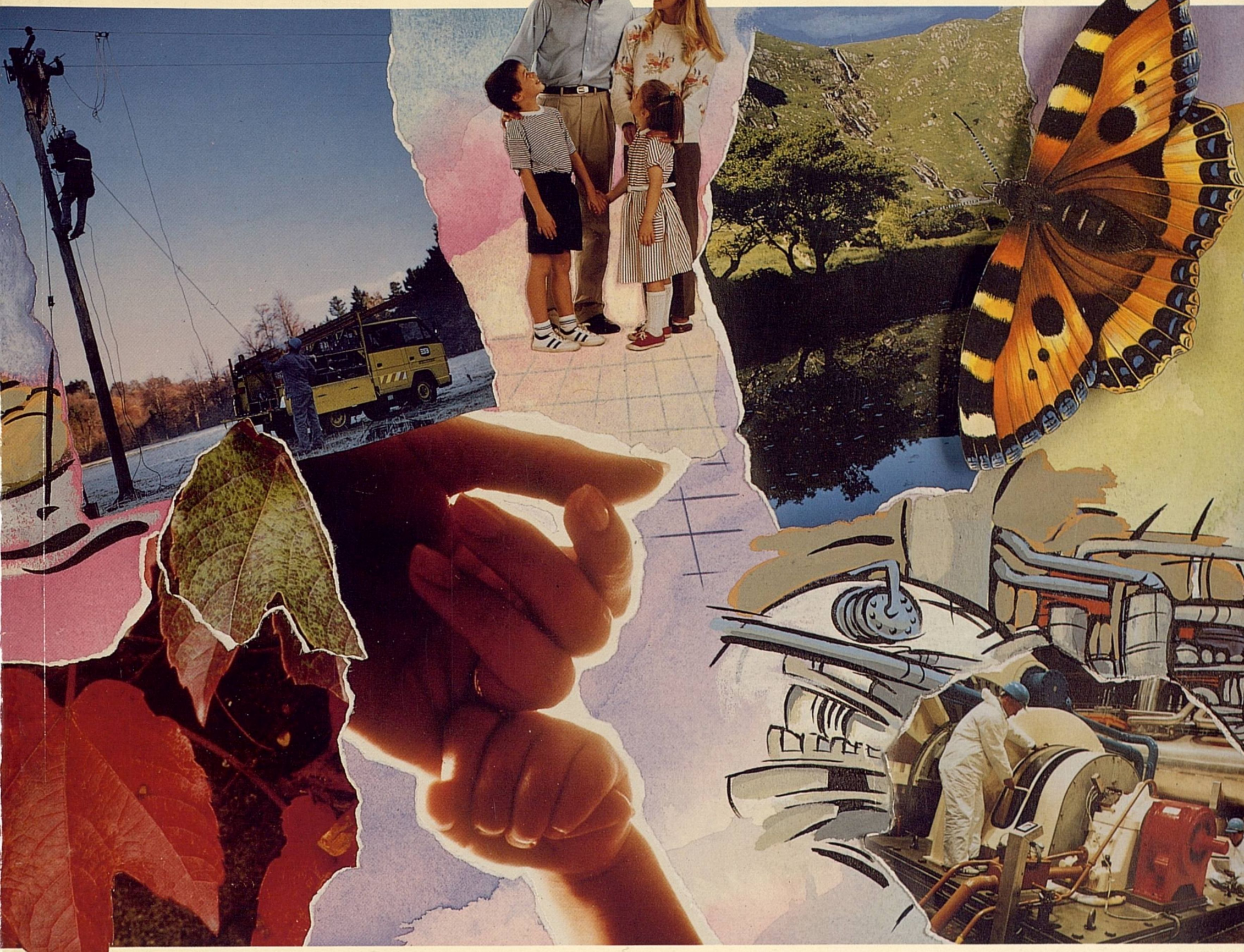


ELECTRICITY SUPPLY BOARD
BORD SOLÁTHAIR AN LEICTREACHAIS

Annual Report for year ended 31 December 1990

Annual Report for year ended 31 December 1990

HIGHLIGHTS

Financial Outcome-Surplus	£1.6m
Income	£819m
Assets in Commission (before depreciation)	£2,270m
Sales (Million Units)	11,768
Effective Generating Capacity (MW)	3,932
Peak Load (MW)	2,600
Customers	1,278,870

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

Pl. 7877

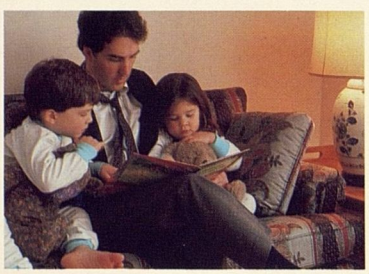


TO THE MINISTER FOR ENERGY

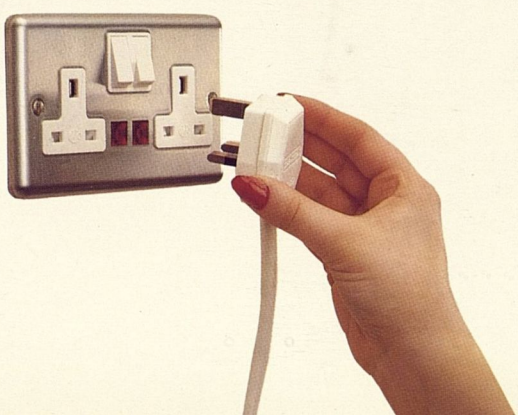


In accordance with the provisions of the Electricity Supply Acts 1927/1988 the Board presents its Annual Report and Accounts for the twelve months ended 31 December, 1990.

Despite indications of the return of some adverse cost trends, prudent management of the business ensured that 1990 was another satisfactory year for ESB. Electricity prices were kept stable, costs were contained, there was a surplus in trading and electricity supply was satisfactory throughout the country. ESB staff continued to co-operate with the introduction of change and relations with the trade unions representing the staff were positive. For most of the year the trends of economic recovery and expansion of the previous two years continued although there was evidence of uncertainty in the last quarter arising from recessions elsewhere in the world and from the developing war-cloud in the Middle East.



The buoyancy in the economy was reflected in the demand for electricity which increased by 5.4% in 1990 compared with 5.2% in 1989. Growth occurred in all sectors, industrial, commercial and residential. The highest growth occurred in the commercial sector, 7.5% against 5.6% in the residential sector and 3.9% in the industrial sector. Demand growth is welcome in most industries and no less so in ESB where it brings increased revenue and positive company morale. Excessive growth, however, has a down-side for ESB in that major new borrowings become necessary to finance the construction of new facilities.





Also high usage requires the consumption of larger quantities of fossil fuels to generate the electricity and this creates additional environmental problems.

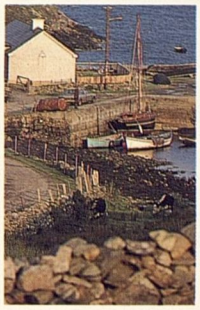
During 1990, in the light of the trends of the new influences which were affecting the electricity industry, world-wide, the Board reviewed its strategic mission and the options available to it for the future. A revised mission statement was agreed as follows :-

"We in ESB will provide our customers with quality energy services at competitive prices, with due care for the natural environment. We will also support national economic progress by engaging in profitable ancillary activities."





CONNECTING WITH THE FUTURE



New strategies were decided and these were conveyed to the Minister for Energy. They were published under the title "Connecting with the Future". This document describes the strategic direction ESB will follow at least until the year 2000. It is primarily concerned with promoting maximum efficiency in the generation, transmission, distribution and usage of electricity to limit growth in demand to the level which is necessary to support national, economic and social development. The guiding strategy is known as Demand Side Management and its objective is to achieve an annual growth in electricity demand of around 3%. If this can be achieved over the long term the benefits to the country will be very substantial both in protecting the environment, in curtailing borrowings to build new plant and in maintaining electricity prices at levels which are competitive in the European Community.



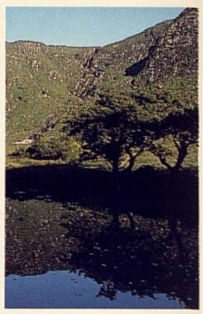
Since its foundation ESB has endeavoured to practise a high standard of responsibility in relation to the environmental impact of its activities. It has worked closely with local authorities in planning new facilities and plant and equipment have been designed to the highest international standards.

Investment has been made in public amenities at hydro-electric power stations and ESB has always actively co-operated with local community environmental developments. ESB is not a late arrival in the protection of our environment and it wholeheartedly supports the many initiatives which the Government has taken, in particular the recent decision to accede to the Helsinki Protocol.



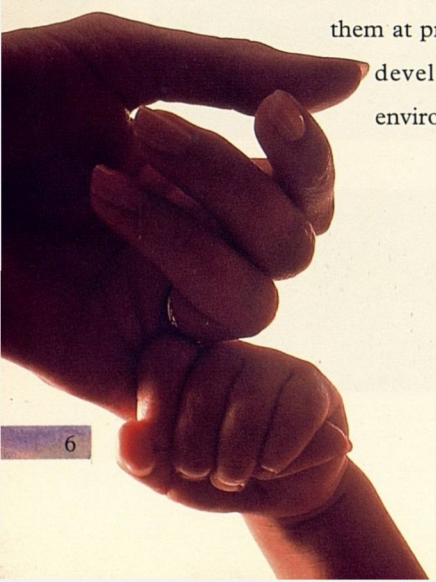


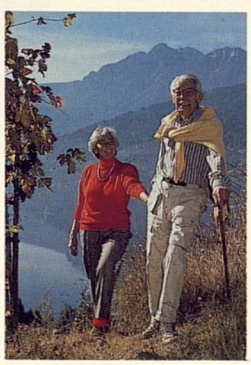
The Board is conscious of the international pressures on Government to adopt ever more stringent standards in the area of atmospheric emissions now that global climate change is becoming a possibility. ESB will continue to play a constructive role in this debate and will play its part in meeting new standards as these are adopted.



In 1990 ESB appointed an Environmental Officer, at senior management level, to monitor the environmental impact of every aspect of the generation, transmission and distribution of electricity and to work closely with the new Environmental Protection Agency which is expected to be established during 1991. Protection of the natural environment does not come cheaply and new measures which may be necessary in the years ahead in order to meet higher standards will inevitably result in increased electricity charges.

The case is regularly made that greater use of renewable energy resources, such as water, wind, waves and solar would reduce the consumption of fossil fuels in the generation of electricity and thereby achieve benign environmental impact. Unfortunately the hydro resources left to be developed in Ireland are very meagre and the technology has not been developed anywhere to enable electricity to be generated from the wind and the waves on a large scale at prices which can be afforded by industry, commerce and the general public. Nevertheless ESB is encouraging private small hydro and wind developments by offering to purchase electricity from them at prices which have to be subsidised on top of the EC grants to the developers. Again the cost of such subsidies in the interests of environmental protection has to be borne by ESB customers.





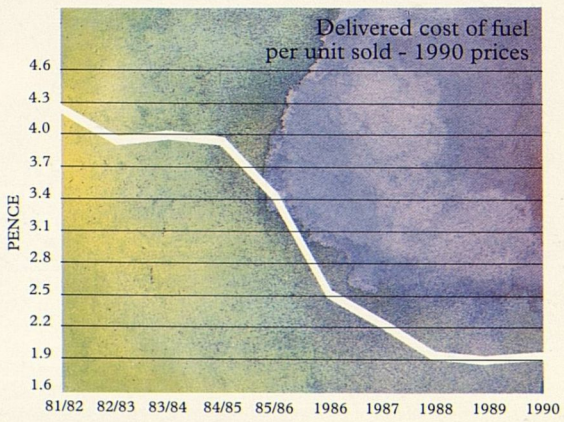


FUEL



During the fifties and sixties planners, the world over, saw the future with 'certainty' as being with oil and nuclear as the fuels for electricity generation. This belief suffered a major shock in the seventies from the two oil crises and from growing public unacceptability of nuclear. Ireland was no different and we were ill-prepared for the crisis in oil prices in 1973, being dependent that time on oil for 65% of electricity generation. The consequence of the oil crises was massive electricity price increases, recession and stagnation in growth. The Board's response to the crises was a strategy to diversify into other fossil fuels but it eschewed nuclear energy as an option. The success of the diversification strategy may be gauged from the fuel usage for electricity generation in 1990 - coal 42%, Kinsale gas 27%, peat 16% and hydro 5% with oil supplying the remaining load at 10%. The comparative average fuel costs for 1990 per MWh were coal £12.17, Kinsale gas £17.12, peat £34.42 and heavy fuel oil £17.17.

The outlook for the future looked reasonably stable until the invasion of Kuwait in August, 1990. The result was, once again, escalation of oil prices. Not only does this price rise affect the cost of oil consumed by ESB but it also affects the cost of Kinsale gas for which ESB is obliged to pay a price directly linked to oil prices.





The full effects of this price volatility have been abated by the fact that we had negotiated gas prices, up to the end of 1990, with a ceiling of 20p per therm. Also, we had, prior to the August crisis, filled storage tanks to capacity with one year's supply of heavy fuel oil. Coal contracts have been re-negotiated for the coming year at satisfactory prices. Overall, the Board is pleased to record its satisfaction with the management of its fuel purchasing which, despite the current crisis, has ensured that fuel price rises pose no serious threat to the price of electricity for 1991 except in the case of the pricing of Kinsale gas over which ESB has no control.



Future Growth in Electricity

Future growth in electricity demand will have to be met by increased use of fossil fuels. A cleaner coal technology is not expected to emerge from international research and development programmes before the year 2000. To bridge the gap until then natural gas will have to meet the increase in primary fuel demand and as the Kinsale Head field is depleting, gas must be imported. The Board welcomes the Government's decision to construct a pipeline to the United Kingdom and it is satisfied with the Minister's arrangement for the participation of ESB officials in the planning and negotiation of gas procurement contracts. When the pipeline is constructed ESB will be by far the biggest customer for imported gas.



Customer Service

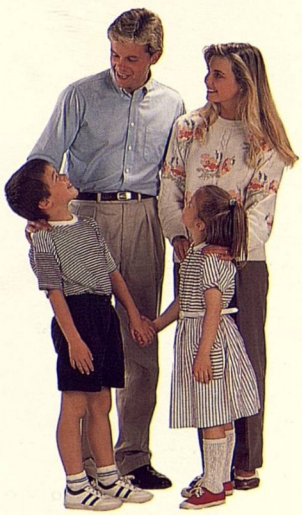
The technical quality of electricity supply is important to customers and ESB has a continuing programme to achieve standards of continuity, voltage and frequency everywhere in the country which are up to the best international practice. This performance improvement programme requires substantial investment each year in the installation of new equipment with advanced technology and in the maintenance and repair of plant and networks. There was steady progress on all fronts during 1990 and a major initiative was taken with the trade unions aimed at improving the efficiency and availability of power station plant. The Board is hopeful that this initiative will be successful since it would have significant advantages for the nation, for customers and staff.





The Board has always placed a strong emphasis on personal service to customers. A highlight of 1990 was the publication of a Customers' Charter which sets out in detail our commitment to quality customer service and the standards of performance against which we are prepared to be judged on all aspects of the company's relationship with its customers. A programme of investment in information technology which was started five years ago is now bearing fruit with ESB systems and procedures of management, accounting, administration, technical control and customer service the equal of those of the best electricity companies in the world.



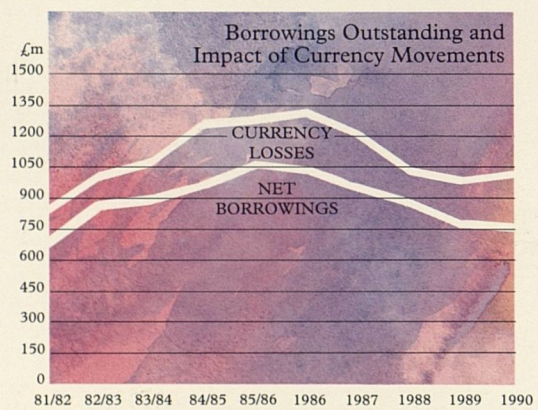


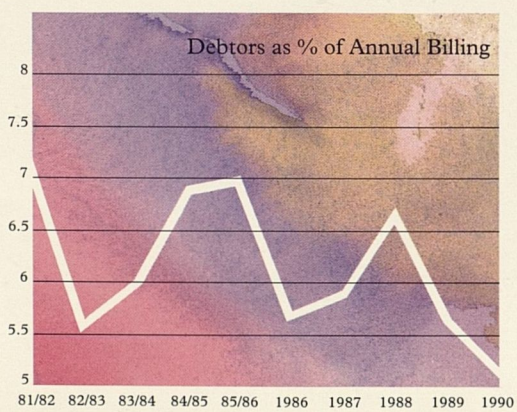


FINANCIAL OUTCOME

The outcome for the year was a surplus of £1.6 million. In a turnover of £800 million it may seem very small but, in the particularly difficult circumstances of 1990 and in the context of the Board's statutory financial target of breaking even, it is a cause for satisfaction. The upheaval in the energy industry caused by the Gulf crisis could have been expected to worsen ESB's financial outcome significantly but higher than anticipated sales of electricity, stringent cost containment and prudent forward oil purchases during the year were the principal contributors to the satisfactory financial out-turn. A major impact on our finances in 1990 was the special discount to residential customers, which cost £12 million, to offset the impact of the extra 5% VAT applied to electricity in the 1990 Budget. The Board decided to continue this discount for 1991 which will cost £16 million, and to which also must be added a further £16 million absorbed in electricity prices for the earlier 5% VAT which was applied from 1988. The Board, however, regrets that it could not absorb an extra £8 million representing the 2.5% increase in VAT imposed in the 1991 Budget.

The reduction of debt over the past few years has been one of the main contributions to our financial stability. However, the higher growth rates which have emerged in the past two years require immediate investment in the recall and refurbishment of generating plant. Little further debt reduction can now be anticipated and this will require new financial strategies by the Board in the years ahead.





PLANT CAPACITY

It is over twelve years since ESB last decided to add new generating capacity to the system. The need to build new stations is caused by increases in the peak demand for electricity which arises from growth. The ability of any system of generating stations to meet the peak demand is referred to as the "peak carrying capability" or PCC of the system. At present the generation system of ESB consists of 3,932 MW in commission and the PCC of this system is 2,760 MW. The PCC of the system can be increased in one or other of the following ways :



1. Cut-back on the margin which is required to ensure a reliable ability to meet peak demand. It is not appropriate to consider this option because our standards of supply are those which are generally applied internationally and we believe that our customers deserve no less.

2. Improve the reliability of existing plant. Substantial investment is being made to improve the reliability of existing plant and this is a very cost-effective way of improving PCC.

3. Build extra new plant. For good financial and environmental reasons the Board's strategy, known as Demand Side Management, is directed at containing the increase in demand for electricity. This, coupled with the re-commissioning of two 60MW units at Great Island and the recall of up to three similar units at Tarbert and Marina, will postpone the need to build new power stations at least until the late nineties.

THE PRICE OF ELECTRICITY

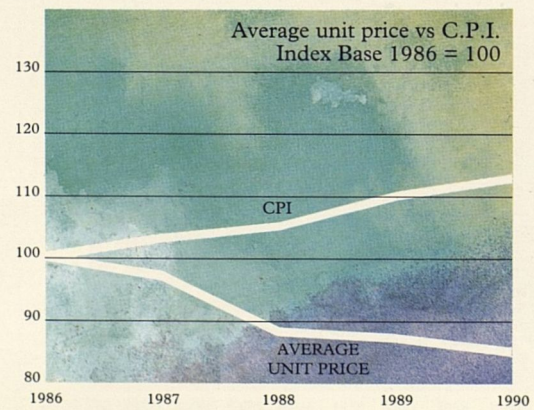


Electricity prices have been progressively reduced since 1984 and they are now about 10% below the European average.

In 1989 the Board promised to hold prices stable for a three year period unless major unforeseen circumstances intervened. The Board is pleased that it has now achieved the promised stability in the first two of those three years. Even though the Gulf War will make 1991 a very difficult year as regards oil prices, the Board and its management are determined to maintain the price promise for this year. This promise still stands but, unfortunately, the Board could not further reduce its prices to absorb the additional VAT of 2.5% imposed in the 1991 Budget.



The Board feels that national economic recovery has been greatly helped in the past five years by the dramatic reductions in electricity prices which improve the competitiveness of home and export industries. It is, however, necessary to record that no industry can forever avoid the impact of inflationary and market trends and inevitably electricity prices too will need to be adjusted. The Board and its management will ensure that when a price increase becomes necessary it will be very moderate. From the Board's point of view the most satisfactory arrangement for the future would be the adjustment of electricity prices in accordance with a formula, agreed with Government, which would signal changes well in advance to facilitate business planning in the industrial and commercial sectors.





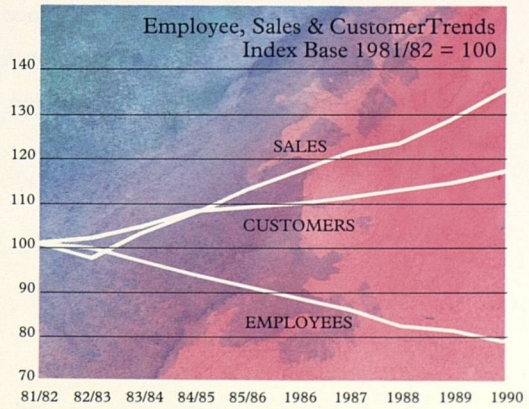
Account Payment

The Board thanks the vast majority of customers who pay their electricity accounts on time. The weekly WinElectric draws have continued to gain in popularity. Over 200,000 customers now avail of the weekly budgeting facility of Easypay and there is an extensive range of other convenient payment methods. These have achieved, in 1990, the lowest ever level of debtors. The resultant interest savings have contributed significantly to cost containment and price stability.

The ESB Help Programme continues to be very successful. Over 100,000 special payment arrangements were made in 1990. The Board is very appreciative of the co-operation received from the various voluntary and statutory welfare organisations throughout the country.

Employee Relations

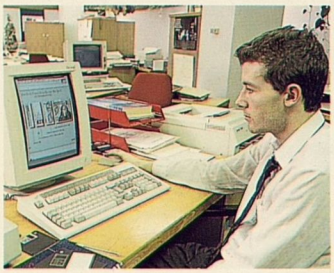
A cornerstone of the Employees' Charter issued by the Board in 1989 is that we share information about the business with the employees, listen to their concerns and take account of them, and seek good relations with the staff and their trade unions. We maintain effective industrial relations procedures and promote their use to resolve difficulties. A consequence of paying active attention to good employee relations is that only 1,380 workdays or 0.05% of the total were lost in 1990 through industrial action. This was one of the best ever results for the company but there can be no room for complacency. The ESB Industrial Council continued to play a valuable role in maintaining industrial peace.





Training and Development

ESB makes substantial investments in the development of staff so that employees' talents and skills may be used to the best advantage of the person and the company in the interests of better service for the customer. In 1990 we spent £12 million on staff training and development. As well as providing for all of the ongoing training needs of a complex nationwide business we are now putting in place new arrangements to sharpen the focus of staff development and to make it available to the entire workforce.



Equal Opportunity for Women

The implementation of equality of opportunity for women in ESB continues to be a priority. We have had a formal policy of equal opportunity for several years, and in 1985 ESB was amongst the first of the major businesses in Ireland to appoint its own Equal Opportunity Officer. In 1990 we invited Dr. Mary Redmond, an authority on labour law and equal opportunity, to chair a review group of young men and women within ESB to examine and report on the present reality of equal opportunity for women in the company. The review group consulted extensively with staff, unions and management and submitted a comprehensive report and recommendations. ESB has accepted all of the group's recommendations and is implementing them.



Staffing

The number of regular staff (including apprentices and part-time staff) employed in ESB on electricity supply was 9,733 at year end. The Board is once again pleased to pay tribute to the co-operation and commitment of the staff and the quality of their work in serving our 1.25 million customers in all circumstances and conditions.

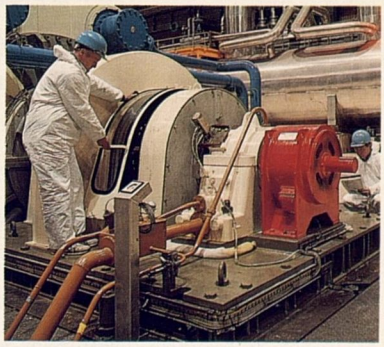
Bright Ideas

The most extensive, exciting and rewarding initiative in employee participation ever attempted in ESB was carried out with great enthusiasm and success during 1990 which was designated "The Year of Innovation". It took the form of a team-based programme which we called "Bright Ideas", carried out all over the company during a three month period. Staff of every level and category were encouraged to get together in groups and come up with practical ideas which they could demonstrate would, when implemented, save money or improve customer service. Over 90% of all staff participated and the results exceeded all expectations. Service improvements and potential savings in excess of £16 million annually were identified and approved for implementation, and successful teams shared in valuable prizes related to the level of savings generated by their ideas.



Safety

The safety of staff and the public is of paramount concern to the Board, which has a strong tradition of attention to safety through education/training and publicity directed at the general public and at special groups such as site workers and farmers. There are safety committees at local and central level under the overall direction of the Chief Executive.



The safety arrangements and procedures of ESB have been further developed where necessary to meet all of the requirements of the Safety, Health and Welfare at Work Act 1989 in full consultation with staff representatives and trade unions.

DUBLIN - CULTURAL CAPITAL OF EUROPE 1991



"Anois Teacht an Earraigh" by Yann Renard Goulet, RHA, in ESB Head Office.

From its inception in 1927 the Board of ESB acknowledged a responsibility as a major national enterprise to support the development and maintenance of the distinctive culture of Ireland. It commissioned Sean Keating RHA to record on canvas the enormous work of constructing the Shannon Scheme and his many paintings of that historic time remain as evidence today of the visionary development which marked the confident first steps of the fledgling Irish nation.

Down the years ESB has sponsored a wide range of cultural, artistic and community endeavours in all parts of Ireland. We are a founder member of COTHU, the national organisation of business support for the arts.

Dublin has the honour of being European Cultural Capital during 1991. ESB is playing its part in enhancing the cultural image of the city in which it has its head office, two power stations and an electricity supply serving all its inhabitants. The faithful restoration and the floodlighting by the Board of its terrace of Georgian houses in Upper Mount Street at a cost of £5 million, largely completed by the end of 1990, will provide an enhanced cultural focus for Dublin, especially with the planned opening to the public of one of the houses as a fully furnished and permanent museum of Georgian times. In addition, the Board is providing Dublin Corporation with new railings and ornamental gates for Archbishop Ryan Park (Merrion Square) which is an amenity enjoyed by hundreds of people - Dubliners and visitors - every day, in the vicinity of our head office.

RESTORING GEORGIAN DUBLIN

In September 1988 ESB commenced work on the restoration of ten Georgian Houses at Upper Mount Street and Lr. Fitzwilliam Street. The plan was to restore them to their full original Georgian splendour.

The work on these houses is now complete. One of the houses, No. 29 Fitzwilliam St., will be open to the public commencing in 1991.



ESB Art Collection includes work by:

Robert Ballagh
Ruth Brandt, RHA
Patrick Collins, RHA
Tom Cullen
Basil Dalton
Edward Delaney,RHA
Berthold Dunne
Martin Gale
Arthur Gibney, RHA
Tim Goulding
YannGoulet, RHA
Henry Healy
Patrick Hennessy,RHA
Derek Hill
Sean Keating, RHA
John Keating
Cecil King, RHA
Richard Kingston,RHA
Norman McCaig
MauriceMcGonigle,RHA
Nora McGuinness, RHA
Frank McNabb
Bernadette Madden
J. Marjoram
Rosita Managhan
Cathlenn Moran
Tom Nisbett, RHA
James Nolan, RHA
Fergus O'Ryan, RHA
Eric Patton, RHA
Stephen Rotschild
Tom Ryan,
President RHA
John Skelton
Tory Island Painters
Liam Treacy
Charles Tyrell
Barbara Warren, RHA
Nancy Wynne-Jones

SUBSIDIARY COMPANIES

With the active support and encouragement of Government, ESB has now in place a soundly-based group of subsidiary companies which compete strongly in international markets and are well positioned for growth. Their focus is on the use of ESB skills and resources outside of the core business to support national economic development, employment and wealth creation. Priority has been given to the development of internationally competitive firms in the engineering services, manufacturing, financial services and aquaculture sectors.

The largest firm in the Group, ESB International Ltd., is well established as a leader in utility engineering and consultancy services internationally. In 1990, through its UK subsidiary, the company has very successfully penetrated new markets in the privatised electricity industry. Its most spectacular success was a ten-year contract for the operation and maintenance of a new 350MW gas-fired power station at Corby in Northamptonshire.

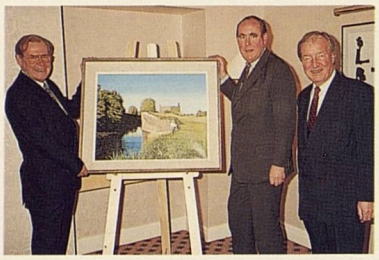
In the area of financial services, steady progress was made in servicing and extending an international client base and in establishing the visibility of the group in a widening range of activities. A group subsidiary, FTI, has been approved for a licence in the Dublin International Financial Services Centre and it has the objective of developing a significant presence there.

Further sea farm capacity was successfully added in the growth of the salmon farming business, with the creation of new jobs and other substantial indirect benefits to the local economies of coastal communities. Up to 1988 ESB fish farming operations were highly profitable. The years 1989 and 1990 have not been profitable due to a combination of poor prices in over-supplied international markets and exceptional stock losses, and because a number of new farms were still in the development stage. The outlook for the future is more positive and the plans of SALMARA will be directed, in the short-term, towards consolidating existing farms rather than towards further expansion.

In 1990 and over the whole three-year period of the Programme for National Recovery, ESB demonstrated steady progress on its specific commitment to diversification. A continued commitment will be made in the context of the new Programme for Economic and Social Progress to ensure a positive contribution to sustained economic growth based on the development of competitive, indigenous enterprise.



BALLINAMORE-BALLYCONNELL CANAL



For many years ESB has invested in developing public amenities in the vicinity of its hydro-electric schemes. For geographical reasons, however, it has not been possible to do this in the case of the Erne as most of the catchment area lies in Northern Ireland. In 1989 ESB sought to redress this situation by proposing the restoration of the long disused Ballinamore-Ballyconnell Canal which links two historic Irish waterways, the Shannon and the Erne.

This initiative received strong support from Government and the Board is pleased to report the formal launching of the restoration project in November, 1990 by An Taoiseach, Dr. Charles J. Haughey, T.D., and The Right Honourable Mr. Peter Brooke, M.P., Secretary of State for Northern Ireland. For ESB this project continues the excellent co-operation which has existed between the company and the North of Ireland Authorities for more than 40 years and the Board is very pleased to be associated with an enterprise which has the potential to build such co-operation among the wider communities in Ireland.

The Department of Foreign Affairs played a major role in co-ordinating the contributions to the project from many sources, including the European Community, the International Fund for Ireland, the Northern Ireland Authorities and the Irish Government.

The Board welcomes the opportunity to be associated with these contributors and is pleased that responsibility for the execution of the project has been entrusted to one of its subsidiary companies, ESB International.



BOARD MEMBERSHIP

There were several changes in the membership of the Board during 1990. Mr. Colm McCarthy and Professor Edmond O'Kelly were appointed to the Board by the Government in March 1990 under the provisions of the Electricity (Supply) Act 1927. In the elections for worker Board members under the Worker Participation (State Enterprises) Acts 1977 and 1988, Mr. Denis Holland, Mr. Sean Geraghty and Mr. Joseph LaCumbre were re-elected and Mr. Eamon Kelly was elected to the fourth vacancy. In accordance with the provisions of these Acts all were subsequently appointed in January 1991 to the Board by warrant from the Minister for Energy.

Mr. Willie Cremins, worker Board member for two successive three-year terms, did not contest the 1990 elections for worker Board members. Mr. Cremins has been appointed General Secretary of the ESB Officers' Association. The Board expresses its appreciation of his services as a Board member and wishes him well in his new career.

The following were the Members of the Board at 31 December, 1990 :

C.T.G. Dillon (15)
W. Cremins (16)
Betty Dillon Hall (13)
S. Geraghty (17)
D. Holland (15)
P.J. Kevans (16)
J. LaCumbre (16)
W.M. McCann (15)
C. McCarthy (9)
P.J. Moriarty (17)
E. O'Kelly (11)
J. Wrynn (15)

There were seventeen separate Meetings of the Board during the year ended 31 December, 1990. The number in brackets opposite each name is the number of Meetings attended by each Board Member.

This Report was approved by the Board at its Meeting on 27 February, 1991, for submission to the Minister for Energy.

Charles T.G. Dillon, Chairman.

P.J. Moriarty, Chief Executive.

E.F. O'Mahony, Secretary.

Board Members

C.T.G. Dillon, Chairman

Betty Dillon Hall

S. Geraghty

D. Holland

E. Kelly

P.J. Kevans

J. LaCumbre

W.M. McCann

C. McCarthy

P.J. Moriarty, Chief Executive

E. O'Kelly

J. Wrynn

Executive Directors of ESB

Personnel
L.S. Canning

Generation and Transmission Operations
J.A. Duffy

New Business Investment
P.H. Haren

Finance
D.J. Moran

Corporate Services
K. O'Brien

Customer Operations
K. O'Hara

Secretary
E.F. O'Mahony

Managing Directors of ESB Subsidiary Companies

ESB International Ltd.
M.C. Hayden

ESB Financial Services Ltd.
J.P. Maher

ESB Industrial Holdings Limited
P.H. Haren

Salmara Fisheries Ltd.
M.C. Conway



Accounts

for year ended 31 December 1990

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Consolidated Profit and Loss Account

Year ended 31 December 1990

	Notes	1990 £000's	1989 £000's
Turnover	1	**819,414**	786,746
Operating Costs	2	**(702,253)**	(655,935)
Net Interest Cost	3	**(84,790)**	(87,535)
Operating Surplus		**32,371**	43,276
Provision for Repayment of Borrowings (See Policy Note 3.)		**(30,588)**	(33,810)
		1,783	9,466
Share of Associated Companies' (Loss)/Profit		**(273)**	(479)
		1,510	8,987
Exceptional Item	20	**—**	2,500
Surplus before Taxation		**1,510**	11,487
Taxation	13	**(140)**	—
Surplus after Taxation		**1,370**	11,487
Minority Interests		**237**	90
Surplus for Year	16	**1,607**	11,577
Deficit from Previous Year		**(54,295)**	(65,872)
Deficit to Next Year	16	**(£52,688)**	(£54,295)

Balance Sheets as at 31 December 1990

	Notes	Consolidated 1990 £000's	Consolidated 1989 £000's	Parent 1990 £000's	Parent 1989 £000's
Assets Employed:					
Fixed Assets:					
Intangible Assets	5	**570**	636	**—**	—
Tangible Assets	6	**1,548,411**	1,539,371	**1,540,812**	1,532,751
Financial Assets	7	**51,011**	49,794	**71,129**	65,667
		1,599,992	1,589,801	**1,611,941**	1,598,418
Current Assets:					
Stocks	8	**116,780**	93,341	**112,992**	90,705
Debtors	9	**229,761**	192,191	**227,656**	185,981
Investments	10	**1,136**	1,327	**1,136**	1,327
Cash at Bank and in Hand		**37,892**	8,748	**32,576**	6,855
		385,569	295,607	**374,360**	284,868
Creditors – Amounts falling due within one year	11	**(281,867)**	(211,562)	**(281,127)**	(209,451)
Net Current Assets		**103,702**	84,045	**93,233**	75,417
Total Assets less Current Liabilities		**1,703,694**	1,673,846	**1,705,174**	1,673,835
Creditors – Amounts falling due after more than one year	12	**(941,615)**	(978,273)	**(940,493)**	(977,875)
Provisions for Liabilities and Charges	13	**(61,342)**	(56,626)	**(60,830)**	(56,506)
Net Assets		**£700,737**	£638,947	**£703,851**	£639,454
Financed By:					
Reserves:					
Sinking Fund for Repayment of Borrowings	14	**49,542**	49,466	**49,542**	49,466
Other Reserves	15	**703,341**	642,997	**703,393**	643,055
Profit and Loss Account		**(52,688)**	(54,295)	**(49,084)**	(53,067)
Minority Interests		**542**	779	**—**	—
		£700,737	£638,947	**£703,851**	£639,454

Signed: Charles T. G. Dillon, *Chairman*

Signed: P. J. Moriarty, *Chief Executive*

D. J. Moran, *Director, Finance*

27 February, 1991

Consolidated Statement of Source and Application of Funds

Year ended 31 December 1990

	Notes	1990 £000's	1989 £000's
Source of Funds:			
Net Funds Generated by Operations	17	**101,414**	127,998
Creditors falling due after more than one year (excluding Long Term Borrowings)	12	**—**	10,854
New Borrowings (Net of Discount on ESB Stock Issues)	12	**98,469**	43,236
Interest Income (incl. gains) on Sinking Fund Investments	14	**14,228**	6,373
Non-Repayable Supply Contributions	15	**14,424**	11,829
Net Proceeds of Disposal of Tangible Fixed Assets	-	**3,345**	13,285
Net Credits/(Premiums) on Stock Cancellations	14	**—**	4
Decrease in Sinking Fund Investments	7	**—**	281
Decrease in Financial Investments other than Sinking Fund Investments	7	**65**	—
		231,945	213,860
Application of Funds:			
Purchase of Tangible Fixed Assets	6	**92,060**	84,729
Goodwill on Acquisition of Subsidiaries	5	**—**	652
Acquisition of Associated Companies	7	**502**	1,200
Creditors falling due after more than one year (excluding Long Term Borrowings)	12	**1,999**	—
Increase in Sinking Fund Investments	7	**1,053**	—
Increase in Financial Investments other than Sinking Fund Investments	7	**—**	165
Redemption of Borrowings	12	**107,144**	127,269
Net Credits/(Premiums) on Stock Cancellations	14	**43**	—
		202,801	214,015
Net Inflow/(Outflow) of Funds		**29,144**	(155)
Movement in Net Liquid Funds:			
Increase/(Decrease) in Cash at Bank and in Hand		**£29,144**	(£155)

Consolidated Value Added Statement

Year ended 31 December 1990

	Notes		1990 £000's		1989 £000's
Sources of Income:					
Turnover	1	**819,414**		786,746	
Share of Associated Companies' (Loss)/Profit	P & L	**(273)**		(479)	
Insurance Claim Settlement	P & L	**—**		2,500	
			819,141		788,767
Less Costs of:					
Fuel	2	**226,549**		208,611	
Materials and Services	2	**170,488**		149,634	
Depreciation of Assets	2	**80,642**		78,427	
			477,679		436,672
Value Added			**£341,462**		£352,095
Distribution of Value Added:					
Employees — Payroll	2		**203,763**		195,726
Lenders					
Interest	P & L	**84,790**		87,535	
Provision for Repayment of Borrowings	P & L	**30,588**		33,810	
Provision for Currency Movement on Borrowings	2	**20,811**		23,537	
			136,189		144,882
Provision for Deferred Taxation	P & L		**140**		—
Minority Interests (Loss)	P & L		**(237)**		(90)
Reduction in Deficit brought forward			**1,607**		11,577
			£341,462		£352,095

ESB and Subsidiaries Statement of Accounting Policies

1. BASIS OF ACCOUNTING

The financial statements have been prepared under the Historical Cost Convention.

Section 21(2) of the Electricity (Supply) Act 1927 requires ESB (Parent) to fix charges made for the sale of electricity and for goods and services rendered by it so that the revenue derived in any year from such sales and services will be sufficient and only sufficient (as nearly as may be) to pay all salaries, working expenses, and other outgoings properly chargeable to income in that year and such sums as the Board may think proper to set aside in that year for reserve fund, extensions, renewals, depreciation, loans, and other like purposes. The accounting policies adopted in these financial statements reflect this requirement.

2. BASIS OF CONSOLIDATION

The group financial statements include the financial statements of the parent and of all subsidiaries together with the Group's share of the net assets of associated companies. Where a subsidiary or an interest in an associated company is acquired during the financial year, the group financial statements include the attributable results from the date of acquisition.

A separate profit and loss account for the parent is not presented.

3. PROVISION FOR REPAYMENT OF BORROWINGS

An amount is included in the profit and loss account each year, and allocated to the sinking fund reserve, so as to set aside such sums as are considered proper for the repayment of borrowings as is required under the terms of the Electricity (Supply) Act 1927. The amount is reviewed periodically and presently consists of:

- An amount for repayment of ESB stock issues in accordance with contractual obligations.
- An amount for repayment of other borrowings calculated at 3% of their Irish Pound value as at the previous year end.

Interest earned on sinking fund investments is credited directly to the sinking fund reserve.

4. FOREIGN CURRENCY

(a) ESB (Parent) Borrowings

Foreign currency borrowings and related hedging contracts are translated at exchange rates ruling at the year end, and differences, including those realised during the year, are allocated against the provision for currency movements on borrowings.

This provision is included in the profit and loss account under operating costs, and is calculated on the basis of average historic experience over the preceding 10 years, which is in line with the repayment profile of the debt. This treatment is consistent with ESB's rate fixing responsibility and is reviewed on a periodic basis.

(b) Subsidiaries

The balance sheets of foreign subsidiaries are translated at year end rates and the profit and loss accounts are translated at average rates for purposes of consolidation. Translation gains or losses arising are disclosed as a movement on reserves.

5. NON-REPAYABLE SUPPLY CONTRIBUTIONS

Non-repayable supply contributions from customers towards the cost of providing or upgrading electricity supply, which are levied in order to provide permanent capital, are credited directly to capital reserves.

6. TANGIBLE FIXED ASSETS AND DEPRECIATION

Tangible fixed assets are stated at cost. Cost includes prime cost, overheads and interest during construction.

Depreciation is designed to recover historical cost over allotted lifespans. Methods used are appropriate to the nature of the Group's business and to the character and extent of all its tangible fixed 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 25/30 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.

7. FINANCE LEASES

ESB leases entered into prior to 1988 are not capitalised and payments made under such leases are charged to the Profit and Loss Account as incurred. The capital element outstanding at 31 December, 1990 in respect of such leases was £2.2m.

From 1988, the cost of assets acquired under finance leases is included in tangible fixed assets. Depreciation is provided at rates designed to recover this cost over the shorter of the allotted lifespans of the assets and the period of the leases.

The capital element of future rentals is treated as a liability and the interest is charged to the Profit and Loss Account over the period of the leases in proportion to the balances outstanding.

8. STOCKS

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.

Provision is made for obsolete, slow moving or defective items where appropriate.

9. FINANCIAL FIXED ASSETS

Financial fixed assets (including Sinking Fund Investments) are shown at cost. Provisions for temporary fluctuations in value are not made unless considered material.

10. DEFERRED PAYMENT/HIRE PURCHASE SALES

Profit on deferred payment/hire purchase sales is taken in the year of sale. Credit for interest is taken on a reducing balance basis over the deferred payment/hire purchase term.

11. TAXATION

Corporation tax payable is provided on taxable profits at the current rates.

Deferred tax is accounted for in respect of all material timing differences only to the extent that it is probable that a liability will arise in the foreseeable future. Unutilised capital allowances/losses forward at 31 December, 1990 are estimated at £670m. The potential tax liability deferred as a consequence of accelerated capital allowances is estimated at £73m. (31 December, 1989 £65m.).

12. FUEL COMMITMENTS

ESB (Parent) policy is to hedge exchange rates applicable to a significant proportion of its estimated future requirements for fuel by means of appropriate hedging contracts.

The exchange rate used in the cost of hedged US Dollars for fuel purchases is the average exchange rate of the hedging contracts in place. Other fuel purchases are recorded at the spot rate or at the actual rate arising on related short term hedging contracts.

This treatment is consistent with ESB's rate fixing responsibility and is reviewed annually.

13. SUPERANNUATION SCHEME

ESB (Parent) operates a defined benefit scheme for its established employees and for the majority of the employees of its subsidiaries, which is externally funded. Pension costs and liabilities are assessed in accordance with the advice of professionally qualified actuaries.

The date of the most recent valuation is 31 March, 1990. Actuarial valuations are advised to members of the scheme but are not available for public inspection.

1. TURNOVER - £000's

Turnover which comprises the value of sale of goods and services, excluding intra-group transactions, is attributable as follows:

	1990	1989
(a) Business Activity:		
Electricity	**759,548**	733,562
Appliance Sales and Contracting	**43,828**	36,231
Other Activities	**16,038**	16,953
	819,414	786,746
(b) Geographic Markets:		
Ireland	**808,200**	775,971
Europe	**4,115**	700
Others	**7,099**	10,075
	819,414	786,746

2. OPERATING COSTS - £000's

	1990	1989
Operating Costs include:		
Fuel (incl. purchased electricity of £0.485m-£0.424m in 1989)	**226,549**	208,611
Payroll	**203,763**	195,726
Depreciation	**80,642**	78,427
Provision for Currency Movements on Borrowings	**20,811**	23,537
Materials/Others*	**170,488**	149,634
	702,253	655,935
* Included under Materials/Others are the following:		
Charges payable under finance leases	**5,193**	5,904
ESB (parent) Board Members' Fees (including remuneration of Chairman)	**38**	56
Audit fees	**130**	113
Bad Debts	**1,711**	1,900
Expenses on New Borrowings	**—**	120

3. NET INTEREST COST - £000's

	1990	1989
Total Interest Payable:		
On loans repayable within 5 years	**44,782**	40,957
On other loans	**47,243**	55,069
	92,025	96,026
Provision for Premium on ESB Stocks:		
On loans repayable within 5 years	**1,217**	1,176
Interest Receivable*	**(6,592)**	(7,743)
	86,650	89,459
Less		
Amount allocated to Capital Work	**(1,860)**	(1,924)
	84,790	87,535

* Included in interest receivable is an amount of £0.081m. (£0.129m. in 1989) in respect of listed investments.

4. EMPLOYEES

	1990	1989
(a) *Average number of employees in year by business activity and total:*		
Electricity Supply	**9,943**	10,159
Appliance Sales and Contracting	**360**	406
Other Activities	**477**	339
	10,780	10,904
(b) *Employee Costs in year - £000's*		
Pay (Salaries/Wages)	**196,318**	185,786
Social Welfare Costs (PRSI)	**4,945**	4,472
Pension Costs	**20,210**	20,181
Other Payroll Costs	**14,130**	13,464
	235,603	223,903

5. INTANGIBLE FIXED ASSETS - £000's

		1990
Goodwill		
Cost		
Balance at start of year		652
Additions		—
Balance at end of year		652
Amounts written off		
Balance at start of year		16
Written off in year		66
Balance at end of year		82
Net Book Value	— 31 December, 1990	570
	— 31 December, 1989	636

Note: Goodwill arises on acquisition of a Subsidiary and is being written off, on a straight line basis over 10 years, from date of acquisition.

6. TANGIBLE FIXED ASSETS - £000's

	Land and Buildings	Plant and Machinery	Total Assets in Commission	Payments on Account and Assets in Course of Construction	Total
Consolidated					
Cost					
Balance at start of year	458,137	1,736,976	2,195,113	31,154	2,226,267
Movements during year:					
Additions/Transfers	11,494	72,377	83,871	8,189	92,060
Retirements/Disposals	(904)	(7,688)	(8,592)	—	(8,592)
Balance at end of year	468,727	1,801,665	2,270,392	39,343	2,309,735
Depreciation					
Balance at start of year	123,822	563,074	686,896	—	686,896
Movements during year:					
Charge	12,559	68,083	80,642	—	80,642
Retirements/Disposals	(429)	(5,785)	(6,214)	—	(6,214)
Balance at end of year	135,952	625,372	761,324	—	761,324
Net Book Value — at 31 Dec, 1990	332,775	1,176,293	1,509,068	39,343	1,548,411
— at 31 Dec, 1989	334,315	1,173,902	1,508,217	31,154	1,539,371

The net book value of tangible fixed assets includes an amount of £31.652m. (£29.072m. in 1989) in respect of assets held under finance leases.
Depreciation charged on such assets during the year amounted to £1.168m. (£0.752m. in 1989). The non depreciable element of land and buildings amounts to £3.3m. (£3.7m. in 1989).

Parent					
Cost					
Balance at start of year	455,442	1,732,236	2,187,678	31,154	2,218,832
Movements during year:					
Additions/Transfers	11,482	69,977	81,459	8,189	89,648
Retirements/Disposals	(881)	(7,577)	(8,458)	—	(8,458)
Balance at end of year	466,043	1,794,636	2,260,679	39,343	2,300,022
Depreciation					
Balance at start of year	123,771	562,310	686,081	—	686,081
Movements during year:					
Charge	12,462	66,846	79,308	—	79,308
Retirements/Disposals	(429)	(5,750)	(6,179)	—	(6,179)
Balance at end of year	135,804	623,406	759,210	—	759,210
Net Book Value — at 31 Dec, 1990	330,239	1,171,230	1,501,469	39,343	1,540,812
— at 31 Dec, 1989	331,671	1,169,926	1,501,597	31,154	1,532,751

The net book value of tangible fixed assets includes an amount of £31.625m. (£29.065m. in 1989) in respect of assets held under finance leases.
Depreciation charged on such assets during the year amounted to £1.162m. (£0.751m. in 1989). The non depreciable element of land and buildings amounts to £3.3m. (£3.7m. in 1989).

7. FINANCIAL FIXED ASSETS - £000's

Consolidated	Associated Companies Shares	Associated Companies Loans	Associated Companies Total	Other Investments	Total
Balance at start of year	1,283	200	1,483	48,311	49,794
Additions/Disposals	114	388	502	988	1,490
Share of retained (Loss)/Profit	(273)	—	(273)	—	(273)
Balance at end of year	1,124	588	1,712	49,299	51,011

Parent	Subsidiary Companies Shares	Subsidiary Companies Loans	Subsidiary Companies Total	Other Investments	Total
Balance at start of year	6,916	10,605	17,521	48,146	65,667
Additions/Disposals	2,222	3,187	5,409	1,053	6,462
Provision for write down	(1,000)	—	(1,000)	—	(1,000)
Balance at end of year	8,138	13,792	21,930	49,199	71,129

In the opinion of the directors, the realisable value of the unlisted investments included above is in excess of their book amount.

Analysis of Other Investments

(a) Financial fixed assets held for sinking fund purposes	Consolidated and Parent Listed	Bank Accounts	Total
Cost			
Balance at start of year	35,616	12,530	48,146
Movement	(26,948)	28,001	1,053
Balance at end of year	8,668	40,531	49,199
Market value at end of year (including Bank Accounts)			49,033

(b) Others (Unlisted)	Consolidated Total
Cost	
Balance at start of year	165
Movement	(65)
Balance at end of year	100

All of the interests and investments (except ESB Sinking Fund) are unquoted.

8. STOCKS - £000's

	Consolidated		Parent	
	1990	1989	**1990**	1989
Fuel	**49,135**	37,500	**49,135**	37,500
Goods for Resale (Appliances)	**4,117**	4,373	**4,117**	4,373
Plant/Network Stocks, Miscellaneous Spares and Sundries	**59,740**	48,832	**59,740**	48,832
Others	**3,788**	2,636	**—**	—
	116,780	93,341	**112,992**	90,705

The replacement cost of stocks is not significantly different from their balance sheet values.

9. DEBTORS - £000's

	Consolidated		Parent	
	1990	1989	**1990**	1989
Amounts falling due within one year				
Trade Debtors	**141,572**	137,900	**137,010**	132,484
Deferred Payments/Hire Purchase Contracts	**10,912**	8,508	**10,912**	8,508
Amounts owed by:				
Subsidiary Companies	**—**	—	**4,992**	1,150
Associated Companies	**160**	5	**—**	—
Other Debtors	**54,654**	25,538	**52,279**	23,622
	207,298	171,951	**205,193**	165,764
Amounts falling due after more than one year				
Deferred Payments/Hire Purchase Contracts	**22,463**	20,217	**22,463**	20,217
Other Debtors	**—**	23	**—**	—
	22,463	20,240	**22,463**	20,217
Total Debtors	**229,761**	192,191	**227,656**	185,981

10. CURRENT ASSET INVESTMENTS - £000's

	Consolidated and Parent	
	1990	1989
Listed	**1,136**	1,327
Market Value of Listed Investments	**1,167**	1,425

11. CREDITORS - AMOUNTS FALLING DUE WITHIN ONE YEAR - £000's

	Consolidated		Parent	
	1990	1989	**1990**	1989
Long Term Borrowings - See Note 12	**109,330**	68,524	**109,330**	68,524
Bank Overdrafts	**9,199**	7,915	**9,030**	7,883
Other Borrowings	**21,353**	2,976	**21,070**	2,927
Progress Payments on Work in Progress	**4,100**	2,748	**3,618**	2,452
Trade Creditors	**49,082**	44,903	**48,261**	44,440
Finance Leases - See Note 12	**4,564**	3,959	**4,562**	3,957
Other Creditors (incl. tax and social welfare)	**37,669**	24,171	**37,373**	24,150
Accruals and Deferred Income	**22,592**	37,325	**20,826**	36,036
Accrued Interest on Borrowings	**23,978**	19,041	**23,978**	19,041
Amounts owed to Subsidiary Companies	**—**	—	**3,079**	41
	281,867	211,562	**281,127**	209,451
Tax and social welfare included in Other Creditors:				
PAYE	**4,458**	4,413	**4,416**	4,411
VAT	**14,196**	3,521	**14,138**	3,504
	18,654	7,934	**18,554**	7,915
Social welfare (PRSI)	**929**	902	**922**	900
	19,583	8,836	**19,476**	8,815

12. CREDITORS - AMOUNTS FALLING DUE AFTER MORE THAN ONE YEAR - £000's

	Consolidated		Parent	
	1990	1989	**1990**	1989
Long Term Borrowings				
Balance at start of year	**1,025,651**	1,138,999	**1,025,256**	1,138,999
Movements during year:				
New Borrowings	**98,469**	43,236	**97,759**	42,841
Adjustment for all Currency Changes	**14,615**	(28,321)	**14,615**	(28,321)
Repayment cost – at opening book value	**(107,144)**	(127,269)	**(107,144)**	(127,269)
– currency changes (within year)	**207**	(994)	**207**	(994)
Total Long Term Borrowings	**1,031,798**	1,025,651	**1,030,693**	1,025,256
(£762.996m. of the above Borrowings is guaranteed by the State – £785.496m. in 1989)				
Repayment Profile:				
Repayable before five years	**490,677**	343,386	**489,572**	342,991
Repayable after five years	**541,121**	682,265	**541,121**	682,265
	1,031,798	1,025,651	**1,030,693**	1,025,256
Less				
Amount included in Creditors falling due within one year (Note 11)	**109,330**	68,524	**109,330**	68,524
Amount due for repayment after more than one year	**922,468**	957,127	**921,363**	956,732
Finance Leases				
Repayable before five years	**20,451**	22,339	**20,432**	22,333
Repayable after five years	**11,220**	11,900	**11,220**	11,900
	31,671	34,239	**31,652**	34,233
Less				
Future finance charges	**7,960**	9,134	**7,960**	9,133
	23,711	25,105	**23,692**	25,100
Included in Creditors falling due within one year (Note 11)	**4,564**	3,959	**4,562**	3,957
Amount due for repayment after more than one year	**19,147**	21,146	**19,130**	21,143
Total Creditors falling due after more than one year	**941,615**	978,273	**940,493**	977,875

13. PROVISIONS FOR LIABILITIES AND CHARGES - £000's

	Provision for Currency Movements	Provision for Generating Station Dismantling	Deferred Tax	Others	Total
Consolidated					
Balance at start of year	**41,390**	**15,116**	**—**	**120**	**56,626**
Transfer from Profit and Loss Account	**20,811**	**—**	**140**	**252**	**21,203**
Revaluation differences	**(16,487)**	**—**	**—**	**—**	**(16,487)**
Balance at end of year	**45,714**	**15,116**	**140**	**372**	**61,342**
Parent					
Balance at start of year	**41,390**	**15,116**	**—**	**—**	**56,506**
Transfer from Profit and Loss Account	**20,811**	**—**	**—**	**—**	**20,811**
Revaluation differences	**(16,487)**	**—**	**—**	**—**	**(16,487)**
Balance at end of year	**45,714**	**15,116**	**—**	**—**	**60,830**

14. SINKING FUND FOR REPAYMENT OF BORROWINGS - £000's

	Consolidated and Parent 1990	1989
Balance at start of year	**49,466**	49,762
Movements during year:		
Provision for Repayment of Borrowings	**30,588**	33,810
Provision for premium on ESB Stocks (See Note 3)	**1,217**	1,176
Net Credits/(Premiums) on cancellation of ESB Stocks	**(43)**	4
Interest income (incl. gains) on Sinking Fund Investments	**14,228**	6,373
Sinking Fund applied to repay borrowings (See Note 15)	**(45,914)**	(41,659)
Balance at end of year	**49,542**	49,466
Represented by:		
Sinking Fund Investments	**49,199**	48,146
Interest Accrued	**343**	1,320
	49,542	49,466

15. OTHER RESERVES - £000's

	Non-Repayable Supply Contributions	Repaid Capital Reserve	Others	Total Reserves
Consolidated				
Balance at start of year	185,048	458,007	(58)	642,997
Movements during year:				
Non-Repayable Supply Contributions	14,424	—	—	14,424
Borrowings Repaid ex Sinking Fund	—	45,914	—	45,914
Translation difference on consolidation of Foreign Subsidiaries	—	—	6	6
Balance at end of year	199,472	503,921	(52)	703,341
Parent				
Balance at start of year	185,048	458,007	—	643,055
Movements during year:				
Non-Repayable Supply Contributions	14,424	—	—	14,424
Borrowings Repaid ex Sinking Fund	—	45,914	—	45,914
Balance at end of year	199,472	503,921	—	703,393

16. CONSOLIDATED PROFIT AND LOSS ACCOUNT

Surplus for Year:
Of the surplus for the year, £3.983m. is dealt with in the accounts of the Parent (£13.567m. in 1989).

Deficit to Next Year:
Of the deficit to next year, £49.084m. is dealt with in the accounts of the Parent (£53.067m. in 1989).

17. NET FUNDS GENERATED BY OPERATIONS - £000's

	Notes	1990	1989
Surplus for Year	P&L	**1,607**	11,577
Add/(deduct) items not involving cash flow:			
Depreciation	6	**80,642**	78,427
Profit on Disposal of Tangible Fixed Assets	—	**(967)**	(705)
Provision for Repayment of Borrowings	14	**30,588**	33,810
Provision for Premium on ESB Stocks	14	**1,217**	1,176
Provisions for Liabilities and Charges	13	**4,716**	44,149
Unrealised exchange differences on borrowings	12	**14,822**	(29,315)
Translation differences on consolidation of Foreign Subsidiaries	15	**6**	(58)
Goodwill written off	5	**66**	16
Deficit/(Surplus) retained in Associated Companies	7	**273**	479
Minority Interests		**(237)**	779
(Absorbed)/Released by Working Capital:			
Stocks	8	**(23,439)**	(8,434)
Debtors	9	**(37,570)**	1,169
Creditors falling due within one year (excl. current element of Long Term Borrowings)	11	**29,499**	(4,823)
Investments	10	**191**	(249)
		101,414	127,998

18. ACCOUNTING YEAR

Income and expenditure are aligned on a 52 or 53 week year as appropriate. 1990 is a 52 week year (1989 — 52 weeks.)

19. CONTRACTUAL CAPITAL COMMITMENTS - £000's

	Consolidated		Parent	
	1990	1989	**1990**	1989
Capital Expenditure				
Contracted for	**13,647**	16,517	**13,647**	15,800
Authorised but not contracted for	**35,600**	30,091	**34,000**	29,000
	49,247	46,608	**47,647**	44,800

20. EXCEPTIONAL ITEM

Final settlement (1989) of consequential loss claim against insurers which arose in 1985/86.

21. COMPARATIVE FIGURES

Where appropriate, previous year's figures are regrouped/restated.

22. APPROVAL OF ACCOUNTS

The Board approved the accounts on 27 February 1991.

23. SUBSIDIARY AND ASSOCIATED COMPANIES

Subsidiary Companies	Registered Office	Group Share %	Nature of Business
ESB International Ltd	Stephen's Court 18-21 St. Stephen's Green Dublin 2.	100	Engineering & General Consultancy
ESB International Consultants Ltd	122 London Road Kingston on Thames Surrey KP26-QJ Gt. Britain	100	Engineering & General Consultancy
ESBI Computing Ltd	Stephen's Court 18-21 St. Stephen's Green Dublin 2.	100	Computer Services
ESBI US Inc	2 Center Plaza Boston 02608 Massachussetts USA	100	Engineering & General Consultancy
ESBI US Energy Inc	2 Center Plaza Boston 02608 Massachussetts USA	100	Energy Services
Salmara Fisheries Ltd	39 Merrion Square Dublin 2.	100	Commercial Fisheries
Kealincha Salmon Ltd	39 Merrion Square Dublin 2.	51	Fish Farming
ESB Financial Services Ltd	37 Upper Fitzwilliam St. Dublin 2.	100	Financial Services
Strategic Finance & Treasury International Ltd	Russell Court St Stephen's Green Dublin 2.	82	Treasury Management Services
ESB Fund Managers Ltd	37 Upper Fitzwilliam St. Dublin 2.	100	Funds Management
ESB Industrial Holdings Ltd	Lr Fitzwilliam St. Dublin 2.	100	Industrial & Commercial Projects
Canal Construction Ltd	Lr Fitzwilliam St. Dublin 2.	100	Canal Construction
Associated Companies			
Irish Salmon Producers Group Ltd	Kilkieran Connemara, Co. Galway	33	Salmon Marketing
Joint Ventures			
Top Tech Ireland Ltd	Poppintree Ind. Est. Finglas, Dublin 11.	50	Supply of Special Processes to Computer Industry.
Ocean Farm Ltd (Disposed of Dec. 1990)	Donegal Road Killybegs, Donegal.	50	Fish Farming
Sevent Industries Ltd	27 Lr Fitzwilliam St. Dublin 2.	49	Electrical Distribution Material Manufacture
ESBI Energy Company	2800 Post Oak Road Houston, Texas 77056, USA	50	Engineering Consultancy
ESBI Atkins International Ltd.	16-18 St Stephen's Green Dublin 2.	50	Civil Engineering

Auditors' Report

As Auditors appointed by the Minister for Energy, with the consent of the Minister for Finance, we have audited the financial statements of Electricity Supply Board on pages 26 to 44 in accordance with auditing standards and have obtained all the information and explanations we considered necessary.

In our opinion, the financial statements, when read in conjunction with the note on the provision for repayment of borrowings on page 30, give a true and fair view of the results and source and application of funds of the Group for the year ended 31 December 1990 and of the state of affairs of the Group and of the Parent as at that date.

In our opinion, the Parent has kept proper books of account with which the balance sheet of the Parent at 31 December 1990 is in agreement.

KPMG Stokes Kennedy Crowley
Chartered Accountants
DUBLIN

27 February 1991

Fisheries Report

To the Minister for the Marine

In accordance with the Electricity Supply Acts 1927/1988, ESB presents its report for 1990 in respect of its fishery activities.

ESB continues to be represented on the Central Fisheries Board, the Shannon Regional Fisheries Board, the River Erne Trout Protection Committee, the Shannon Forum and the Lough Sheelin Management Committee. The Blessington Lake Consultative Committee is chaired and serviced by ESB and is proving to be successful.

It is not in ESB's power to take action regarding the pollution problems caused by agricultural, domestic and industrial effluent entering the rivers and lakes under its control. The problems are serious and during 1990, ESB continued to give all possible assistance to Local Authorities, Regional Fisheries Boards and the Central Fisheries Board in carrying out investigations of major incidents and in the implementation of some remedial measures.

It was a very busy year for protection activities. On the Upper Shannon 30 fyke nets and on the Lower Shannon 28 monofiliment nets were seized by ESB protection staff. A number of cases were referred, with full reports, to the Shannon Regional Fisheries Board for prosecution.

Salmon angling was good in Spring but the warm weather and consequent low water levels affected the fishing later in the year.

The recorded salmon runs were as follows:

	1989	**1990**
Shannon	3,257	**4,484**
Lee	1,354	**496**
Clady	326	**442**
Erne	1,038	**2,616**
Liffey	652	**500**

For the development and re-stocking programme, over one million fingerlings and smolts were released. Total expenditure on fisheries conservation was £1,372,000 and income from the letting of fishing rights, etc., amounted to £45,000. Further development work was carried out at Castleconnell on the Shannon, the Mulcair River and Nenagh River.

During the year the programme for the maintenance of all amenity locations was continued as was the renewal and issue of new leases to sporting and recreational bodies for the use of land and water.

Fisheries — Conservation Operations

Year ended 31 December 1990

	1990 £000's	1989 £000's
Direct Costs/Overheads	**1,372**	1,090
Less:		
Letting of fishing rights and miscellaneous income	**45**	40
Net Cost for year	**1,327**	1,050

Auditors' Report to Electricity Supply Board

We have examined the above figures which have been extracted from the accounting records of Electricity Supply Board. In our opinion, the above extracts are consistent with the financial statements for the year ended 31 December 1990 set out on pages 26 to 44.

KPMG Stokes Kennedy Crowley
Chartered Accountants
DUBLIN

27 February 1991

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ESB Input to Ireland's Economy

	1986 (9 mts) £m	1987 £m	1988 £m	1989 £m	1990 £m
Fuel: Natural Gas, Peat, Native Coal	86	117	119	133	**141**
Irish Suppliers of Goods and Services including Capital Work	86	120	129	138	**175**
Rates	20	27	28	27	**27**
Payroll Costs including Capital Projects	163	223	223	224	**235**
Interest paid to Irish Lenders & Stockholders	49	40	28	25	**26**
TOTAL	404	527	527	547	**604**

Data Summary

		1989		1990
Financial Outcome — Surplus		£11.5m		**£1.6m**
Income		£789m		**£819m**
Assets in Commission (before Depreciation)		£2,195m		**£2,270m**
Sales (Million Units)		11,169		**11,768**
Effective Generating Capacity (MW)		3,932		**3,932**
Peak Load (MW)		2,466		**2,600**
Customers		1,256,765		**1,278,870**
Group Employment at year end		10,724		**10,500**
Operations	8,813		**8,400**	
New Works	1,210		**1,427**	
Apprentices	260		**207**	
Electricity Service		10,283		**10,034**
Consultancy/Secondment		321		**327**
Salmara		120		**139**
Group Payroll				
Pay		£186m		**£196m**
ESB Contribution to Pension Fund/ PRSI and Expenses		£38m		**£40m**

FINANCE

Summary of Electricity and Trading Figures

	Period Ended 31 Dec. 1990	Period Ended 31 Dec. 1989
	£000's	£000's
Electricity		
Expenditure:		
Fuel	**226,549**	208,611
Payroll	**181,252**	175,534
Capital Charges	**208,260**	216,200
Other Costs	**143,413**	123,940
	759,474	724,285
Revenue Income	**760,258**	733,562
	784	9,277
Insurance claim settlement	**—**	2,500
Surplus	**784**	11,777
Trading etc.		
Appliance & Contracts Result	**3,199**	1,790
Other Activities	**(2,376)**	(1,990)
Result for all activities	**1,607**	11,577

The result for the year reduces the total deficit carried forward to 1991 to £52.688m.

FINANCE

5 Year Summary — Financial Statistics

	1986 (9 Mths)	1987	1988	1989	**1990**
FINANCIAL STATISTICS	£m	£m	£m	£m	**£m**
OPERATIONS:					
Income	577	780	756	789	**819**
Expenditure	571	785	751	777	**818**
Surplus/(Deficit)	6	(5)	5	12	**1**
Cumulative (Deficit)	(66)	(71)	(66)	(54)	**(53)**
FUNDING CAPITAL DEVELOPMENT PROGRAMME:					
Requirements:					
Capital Expenditure	100	93	87	85	**92**
Working Capital Movement (excl. long-term debt repayable within 12 months)	7	(12)	(10)	13	**62**
	107	81	77	98	**154**
Financing:					
Internal Resources (after debt repayment)	35	8	—	40	**62**
Borrowings	72	73	77	58	**92**
	107	81	77	98	**154**
SOURCES AND EMPLOYMENT OF CAPITAL:					
Sources:					
*Debt Liabilities Outstanding	1,242	1,153	1,103	1,004	**1,007**
Reserves	441	534	573	638	**700**
	1,683	1,687	1,676	1,642	**1,707**
Employment:					
Net Fixed Assets	1,325	1,496	1,508	1,511	**1,512**
Capital Work-in-Progress	194	39	38	31	**39**
Net Current Assets (excl. long-term debt repayable within 12 months) and Provisions	164	152	130	100	**156**
	1,683	1,687	1,676	1,642	**1,707**
*Inclusive of Cumulative Currency (Loss)	(145)	(122)	(119)	(74)	**(76)**

FINANCE

5 Year Summary — Key Ratios

	1986 (9 Mths)	1987	1988	1989	**1990**
Return on Average Net Assets (%)	8.6	10.2	9.5	9.2	**8.0**
Debt/Net Assets (%)	74.0	68.0	66.0	61.0	**59.0**
Current Ratio (Times)	2.1	2.1	2.0	2.1	**2.3**
Interest Cover (Times) (excl. interest Capitalised)	1.7	1.7	1.6	1.8	**1.6**
Foreign/Total Borrowings (%)	70.0	71.0	76.0	74.0	**68.0**
Internal Resources/Capital Expenditure (%)	35.0	9.0	—	47.0	**58.0**
Average Electricity Credit Period (Days from Date Billed)	25.6	23.7	27.7	23.4	**21.5**

Annual Capital Expenditure (£000's)

Year	Distribution	Transmission	Generation
9 mths 1986	36	17	62
1987	50	11	40
1988	50	10	18
1989	54	5	12
1990	62	2	12

Analysis of Cumulative Investment in Fixed Assets (%)

	1981/ 1982	1982/ 1983	1983/ 1984	1984/ 1985	1985/ 1986	1986 (9 mths)	1987	1988	1989	1990
Distribution	38	36	34	35	27	25	24	25	26	31
Generation	42	43	44	42	53	54	56	54	53	51
Transmission	13	13	14	15	14	15	15	15	14	11
General	7	8	8	8	6	6	5	6	7	7

Analysis of Electricity Expenditure (%)

	1981/ 1982	1982/ 1983	1983/ 1984	1984/ 1985	1985/ 1986	1986 (9 mths)	1987	1988	1989	1990
Fuel	46	42	42	42	39	30	29	27	29	30
Payroll	21	22	20	19	19	22	23	24	24	24
Capital Charges	24	25	26	27	29	33	33	32	30	27
Materials & Others	9	11	12	12	13	15	15	17	17	19

FINANCE

Summarised Statement of Borrowings (Parent)

	Balance Outstanding 31 Dec. 1989	Borrowed During Year	Redeeded During Year	Adjustment For Currency Changes	**Balance Outstanding 31 Dec. 1990**
	£000's	£000's	£000's	£000's	**£000's**
Irish Pound Borrowings	176,501	62,000	19,615	—	**218,886**
Foreign Borrowings	848,755	35,759	87,322	14,615	**811,807**
TOTAL — ALL BORROWINGS	1,025,256	97,759	106,937	14,615	**1,030,693**

Currency and Repayment Profile

	Repayable Within 1 Year	Repayable Within 2 to 5 Years	Repayable Within 6 to 10 Years	Repayable After 10 Years	Total	Currency as % of Total Borrowings
	£000's	£000's	£000's	£000's	£000's	%
Irish Pounds	57,334	159,445	32,676	60,930	310,385	30
European						
Sterling	14	80	—	—	94	—
Deutsche Marks	23,825	40,241	10,845	—	74,911	7
Swiss Francs	15,885	209,974	53,345	514	279,718	27
French Francs	2,664	7,869	11,809	3,919	26,261	3
Dutch Guilders	3,520	7,572	15,344	3,239	29,675	3
Luxembourg Francs	3,191	19,882	21,782	2,092	46,947	5
ECU's	2,647	65,087	133,350	56,231	257,315	25
Others						
Miscellaneous	250	2,647	1,993	497	5,387	—
	109,330	512,797	281,144	127,422	1,030,693	
Repayment Profile	11%	50%	27%	12%		100%

Where debt swaps apply, Irish Pound values are based on currency liability under the swap arrangement.

FINANCE

Detailed Statement of Borrowings (Parent)

Amount Borrowed		Year(s) of Borrowing		Year(s) of Maturity	Balance Outstanding 31 Dec. 1990	
000's			**Irish Pound Borrowings**		000's	
IEP	13,000	1966–67	Stock — 7%	1986/91	**IEP**	**3,988**
IEP	7,000	1968	Stock — 7.25%	1988/93	**IEP**	**1,396**
IEP	12,000	1972	Stock — 9%	1992/95	**IEP**	**2,847**
IEP	12,000	1978	Stock — 13%	1990/92	**IEP**	**8,076**
IEP	20,000	1983	Stock — 13.5%	2006/08	**IEP**	**19,779**
IEP	35,000	1985	Stock — 10% — Premium (25%)	1991	**IEP**	**33,900**
IEP	30,000	1988	Stock — 8.25%	2003	**IEP**	**30,000**
IEP	164,000	1982–90	Domestic Banks	1989/99	**IEP**	**106,900**
IEP	12,000	1990	European Investment Bank	1995/2004	**IEP**	**12,000**
000's			**Foreign Currency Borrowings**		000's	
		1978/89	European Investment Bank	1983/2004		
USD	76,666*		— United States Dollars		**USD**	**53,095**
DEM	210,215		— Deutsche Marks		**DEM**	**122,029**
NLG	148,894		— Netherland Guilders		**NLG**	**88,669**
CHF	285,201		— Swiss Francs		**CHF**	**196,860**
JPY	10,205,000*		— Japanese Yen		**JPY**	**7,925,389**
GBP	20,185*		— Sterling		**GBP**	**19,921**
XEU	82,641		— European Currency Unit		**XEU**	**78,875**
LEC	2,761,636		— Luxembourg Francs		**LEC**	**2,582,062**
ITL	8,145,000		— Italian Lira		**ITL**	**7,714,944**
FRF	149,600		— French Francs		**FRF**	**149,600**
USD	14,500*	1969/73	I.B.R.D. Washington	1974/94	**USD**	**3,980**
USD	30,000*	1972	Japanese Banks	1973/92	**USD**	**2,800**
FRF	376,961	1973/85	French Banks	1977/2004	**FRF**	**87,813**
USD	12,000*	1977	U.S. Syndicate	1983/92	**USD**	**2,400**
DEM	150,000	1979	Banking Syndicate	1986/91	**DEM**	**25,000**
CHF	125,625	1981/85	Swiss Export Agency	1986/97	**CHF**	**73,296**
USD	78,806*	1981/86	Export Import Bank of the United States	1983/2000	**USD**	**46,512**
DEM	120,000	1982	Banking Syndicate	1983/92	**DEM**	**24,000**
JPY	5,000,000*	1983	Japanese Banks	1987/92	**JPY**	**1,850,000**
DEM	50,000	1984	German Bank	1988/93	**DEM**	**25,000**
CHF	50,000	1985	Swiss Banks	1992	**CHF**	**50,000**
CHF	110,000	1987	Swiss Banks	1995	**CHF**	**110,000**
JPY	3,400,000*	1988	Japanese Bank	1998	**JPY**	**3,400,000**
JPY	2,540,000*	1988	Japanese Bank	1993	**JPY**	**2,540,000**
USD	25,000*	1984	Middle East Bank	1993	**USD**	**25,000**
GBP	20,000*	1986	Sterling Acceptance Credit	1992	**GBP**	**20,000**
USD	25,000*	1988	Middle East Bank	1993	**USD**	**25,000**
USD	42,989*	1988	Banking Syndicate	1995	**USD**	**42,989**
DEM	135,000*	1988	Banking Syndicate	1993	**DEM**	**135,000**
CHF	37,800	1988	German Bank	1995	**CHF**	**37,800**
JPY	2,500,000*	1989	Japanese Bank	1999	**JPY**	**2,500,000**
XEU	22,521*	1989/90	U.S. Agency	1999	**XEU**	**22,521**
XEU	3,645*	1990	U.S. Agency/Swissbank	2001	**XEU**	**3,645**
LUF	1,200,000*	1990	Banking Syndicate	1993	**LUF**	**1,200,000**

*Currency debt swap contract in place.

MARKETING

Analysis of Units Sold

Class of Supply	**1990 (Millions)**	1989 (Millions)	Increase (Millions)	% Increase
Domestic				
General Supply	**4,236.7**	4,054.7	182.0	4.5
Night Rate	**332.4**	273.0	59.4	21.8
	4,569.1	4,327.7	241.4	5.6
Commercial				
General Supply	**1,151.0**	1,054.3	96.7	9.2
Heating, Cooking & Water Heating	**199.4**	207.3	-7.9	-3.8
Night Space Heating	**188.8**	181.1	7.7	4.3
Public Lighting	**137.9**	136.8	1.1	0.8
Maximum Demand	**1,075.0**	977.0	98.0	10.0
Miscellaneous	**43.3**	45.0	-1.7	-3.8
	2,795.4	2,601.5	193.9	7.5
Industrial				
Maximum Demand				
High Tension	**3,480.5**	3,333.1	147.4	4.4
Low Tension	**752.4**	744.4	8.0	1.1
Miscellaneous	**170.6**	162.5	8.1	5.0
	4,403.5	4,240.0	163.5	3.9
TOTAL	**11,768.0**	11,169.2	598.8	5.4

MARKETING

Growth of ESB 1930–1990

Year	Units Generated (and purchased)*	Units sold to Customers	Revenue from Electricity Sales	Average price per unit sold	Customers
	Millions	Millions	£000	Pence	Total
1929/30	60.9	43.2	478	1.108	48,606
1939/40	407.0	318.6	1,946	0.612	172,545
1949/50	784.8	626.1	4,774	0.763	310,639
1959/60	2,096.0	1,692.2	14,724	0.871	610,946
1969/70	5,245.7	4,411.6	39,400	0.892	786,500
1979/80	10,213.6	8,560.3	300,024	3.505	1,043,428
1980/81	10,038.4	8,364.6	408,965	4.889	1,070,049
1981/82	10,385.9	8,661.7	517,029	5.969	1,096,950
1982/83	10,194.4	8,518.3	571,992	6.715	1,122,461
1983/84	10,559.2	8.903.5	641,460	7.205	1,145,818
1984/85	10,972.7	9,274.2	696,506	7.510	1,168,679
1985/86	11,465.1	9,787.8	757,172	7.736	1,194,765
9 mths 1986	8,656.6	7,295.4	550,620	7.548	1,207,051
1987	12,491.0	10,506.1	736,441	7.010	1,221,600
1988	12,563.0	10,615.8	707,627	6.666	1,234,957
1989	13,187.0	11,169.2	730,693	6.542	1,256,765
1990	13,895.4	11,768.0	756,074	6.425	1,278,870

*Excluding Units absorbed by Storage Pumping

Electricity Sales by Sector (Million Units)

Year	Domestic	Commercial	Industrial	Total
1981/82	3,659	1,887	3,116	8,662
1982/83	3,599	1,911	3,009	8,519
1983/84	3,703	2,002	3,198	8,903
1984/85	3,795	2,074	3,405	9,274
1985/86	4,001	2,234	3,553	9,788
9 mths 1986	2,821	1,635	2,840	7,296
1987	4,230	2,437	3,839	10,506
1988	4,204	2,466	3,946	10,616
1989	4,328	2,601	4,240	11,169
1990	4,569	2,795	4,404	11,768

DISTRIBUTION

Distribution System at 31 December 1990 (including Rural Networks)

Transformer Stations	No. in Commission	Change in year	Total Capacity in KVA	Change in year (KVA)
110 kV	79	Nil	4,607,900	-38,500
38 kV	397	+2	3,053,300	+38,400
20 kV	99	+99	2,134	+2,134
10 kV/5 kV (excl. U.R.D.)	139,051	+2,312	4,555,857	+138,796
10 kV U.R.D.	1,882	-1	108,811	-75

Lines & Cables	Length km	Change in year	Description
110 kV Lines	3,687	+21	3 x 95 to 3 x 425 sq. mm (Cu. + SCA)
110 kV Cables	85	Nil	3 x 185 to 3 x 2000 sq. mm (Cu. + Al)
38 kV Lines	5,674	-20	3 x 35 to 3 x 300 sq. mm (Cu. + SCA)
38 kV Cables	290	+1	3 x 95 to 3 x 680 sq. mm (Cu. + Al)
20 kV Lines	60	+60	2 x 25 to 3 x 92 sq. mm (Cu. + SCA)
10 kV Lines	77,851	+500	2 x 25 to 3 x 92 sq. mm (Cu. + SCA)
10 kV/5 kV Cables	3,622	+95	2 x 16 to 3 x 240 sq. mm (Cu. + Al)
3.3 kV Cables	Nil	-4	3 x 185 sq. mm Cu.

Distribution System Trends — Cumulative Data

Transformers (kVA)	1986	1987	1988	1989	1990
110 kV	4,589,900	4,646,900	4,671,400	4,646,400	4,607,900
38 kV	2,915,900	2,932,100	2,978,100	3,014,900	3,053,300
20 kV	—	—	—	—	2,134
10 kV/5 kV	4,194,344	4,307,953	4,392,958	4,525,947	4,664,668
Networks (km)					
110 kV	3,727	3,727	3,751	3,751	3,772
38 kV	5,945	5,890	5,939	5,983	5,964
20 kV	—	—	—	—	60
10 kV/5 kV	79,074	79,664	80,244	80,882	81,473

TRANSMISSION

Transmission System at December 1990

Stations

Transformer/Switching Stations	No. in Commission	Change in Year	Total Capacity in kVA	Change in year kVA
400 kV Stations	3	Nil	990,000 at 17/400 kV	Nil
			1,500,000 at 400/220 kV	Nil
220 kV Stations	18	Nil	600,000 at 275/220 kV	Nil
			4,253,000 at 220/110 kV	Nil
			1,180,000 at 20/220 kV	Nil
			420,000 at 13/220 kV	Nil
			1,072,000 at 10/220 kV	Nil
			708,000 at 110/38 kV	Nil
			31,500 at 110/10 kV	Nil
			412,000 at 10/110 kV	Nil
			20,000 at 110/6 kV	Nil

Lines and Cables

Lines and Cables	Length km.	Increase for Year — km.	Description
400 kV Lines	438	Nil	3 x twin 600 sq. mm. single circuit SCA
275 kV Lines	11	Nil	6 x twin 485 sq. mm. double circuit SCA
220 kV Lines	141	Nil	6 x 600 sq. mm. double circuit SCA
220 kV Lines	1,134	Nil	3 x 600 sq. mm. single circuit SCA
220 kV Lines	277	Nil	3 x 425 sq. mm. single circuit SCA
220 kV Lines	4	Nil	3 x 425 sq. mm. twin, SCA
220 kV Lines	13	Nil	3 x 600 sq. mm. twin, single circuit SCA
400 kV Cables	2	Nil	Oil filled
220 kV Cables	19	Nil	High pressure oil pipe-type
220 kV Cables	44	Nil	Oil filled

TRANSMISSION

Transmission System Trends

Station Capacity in kVA — Cumulative Date

Year	220 kV	400 kV
1981/82	6,887,000	—
1982/83	7,682,000	—
1983/84	7,900,000	—
1984/85	8,400,000	—
1985/86	8,400,000	830,000
1986 (9 mths)	8,650,000	1,660,000
1987	8,650,000	2,490,000
1988	8,681,500	2,490,000
1989	8,696,500	2,490,000
1990	8,696,500	2,490,000

Kilometres of Lines/Cables — Cumulative Data

Year	220 kV	275 kV	400 kV
1981/82	1,424	11	—
1982/83	1,427	11	—
1983/84	1,453	11	—
1984/85	1,453	11	1
1985/86	1,468	11	230
1986 (9 mths)	1,560	11	440
1987	1,578	11	440
1988	1,632	11	440
1989	1,632	11	440
1990	1,632	11	440

Plant Availability

Year	Availability %	Year	Availability %
1981/82	95.4	1986 (9 Mths)	95.0
1982/83	96.4	1987	95.8
1983/84	97.0	1988	94.9
1984/85	97.4	1989	96.1
1985/86	95.3	1990	96.1

Note: From 1990, due to a re-classification, 110 kV data appears under 'Distribution'.

OPERATIONS

Statement of Generation Costs

GENERATING STATIONS	Fuel £000's	Operation £000's	Maintenance £000's	Local Charges £000's	WORKS COST 1990 £000's	WORKS COST 1989 £000's	Depreciation £000's	TOTAL COST 1990 £000's	TOTAL COST 1989 £000's
Coal/Oil/Gas									
Marina	8,377	1,616	2,892	1,154	**14,039**	10,581	749	**14,788**	11,356
Arigna	3,365	766	416	265	**4,812**	3,943	15	**4,827**	3,953
Great Island	2,349	1,508	1,189	654	**5,700**	4,498	449	**6,149**	5,032
Tarbert	14,133	2,315	7,374	1,977	**25,799**	16,317	1,549	**27,348**	17,926
Poolbeg	29,929	3,049	5,605	2,931	**41,514**	33,867	3,000	**44,514**	37,208
Aghada	25,457	1,998	2,137	1,794	**31,386**	29,303	2,890	**34,276**	32,274
North Wall	7,053	1,322	3,223	1,143	**12,741**	17,398	1,975	**14,716**	19,346
Moneypoint	66,158	6,035	10,568	8,547	**91,308**	81,695	21,736	**113,044**	103,271
Sod Peat (Machine)									
Portarlington*	—	—	—	—	**—**	316	—	**—**	317
Allenwood	1,891	1,172	734	542	**4,339**	3,950	25	**4,364**	3,966
Milled Peat									
Ferbane	12,127	2,292	2,887	898	**18,204**	16,898	68	**18,272**	16,935
Rhode	10,460	1,818	2,536	723	**15,537**	15,156	57	**15,594**	15,188
Bellacorick	8,233	1,434	1,423	479	**11,569**	9,987	67	**11,636**	10,039
Shannonbridge	18,918	2,456	2,910	1,153	**25,437**	22,336	2,219	**27,656**	24,522
Lanesboro	16,745	1,813	1,674	658	**20,890**	16,484	2,089	**22,979**	18,542
Sod Peat (Hand-Won)									
Three 5 MW Stations	869	740	410	308	**2,327**	2,063	15	**2,342**	2,073
Total — Fuel Stations	226,064	30,334	45,978	23,226	**325,602**	284,792	36,903	**362,505**	321,948
Hydro									
Shannon		777	2,088	1,570	**4,435**	3,723	54	**4,489**	3,761
Erne		444	1,294	1,081	**2,819**	1,924	137	**2,956**	2,056
Liffey		82	1,167	351	**1,600**	2,537	38	**1,638**	2,571
Lee		339	1,595	633	**2,567**	2,029	80	**2,647**	2,107
Clady		69	72	115	**256**	378	20	**276**	399
Turlough Hill (Pumped Storage)		649	750	1,516	**2,915**	2,118	608	**3,523**	2,739
Total — Hydro Stations		2,360	6,966	5,266	**14,592**	12,709	937	**15,529**	13,633
Total — All Stations	226,064	32,694	52,944	28,492	**340,194**	297,501	37,840	**378,034**	335,581

*Retired.

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

OPERATIONS

Installed Capacity

Year	MW	Year	MW
1981/82	3,287	1986 (9 Mths)	3,852
1982/83	3,175	1987	4,009
1983/84	3,260	1988	3,937
1984/85	3,247	1989	3,932
1985/86	3,547	1990	3,932

Percentage Installed Capacity Analysed by Fuel

Year	Oil	Peat	Hydro	Coal	Gas
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
1986 (9 Mths)	20	13	13	16	38
1987	15	12	13	23	36
1988	16	12	13	24	35
1989	16	12	13	24	35
1990	16	12	13	24	35*

*Of the plant classified as Gas, 81% can also burn Oil.

Energy Sources of Units Generated (% share of production)

	1981/ 1982	1982/ 1983	1983/ 1984	1984/ 1985	1985/ 1986	1986	1987	1988	1989	1990
Oil	40	26	20	20	26	48	21	8	5	10
Gas	36	50	54	53	47	16	18	27	31	27
Peat	14	16	18	21	17	12	15	17	15	16
Hydro	9	7	7	5	7	7	6	7	5	5
Coal	1	1	1	1	3	17	40	41	44	42

Percentage Plant Forced Outage Rate

Year	%	Year	%
1981/82	11.4	1986 (9 Mths)	12.9
1982/83	12.1	1987	7.9
1983/84	8.0	1988	7.5
1984/85	6.2	1989	7.2
1985/86	12.3	1990	7.9

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Thermal Efficiency Percentage (of Conversion of Primary Energy to Electricity)

	1981/ 1982	1982/ 1983	1983/ 1984	1984/ 1985	1985/ 1986	1986 (9 mths)	1987	1988	1989	1990
Gas	37.0	35.1	37.3	38.7	38.7	35.2	37.0	39.0	38.6	38.7
Oil	35.8	34.6	35.2	36.5	36.2	36.8	36.5	33.6	35.1	36.3
Milled Peat	23.0	23.8	24.0	25.2	24.8	24.8	24.8	25.1	25.1	25.6
Sod Peat	20.0	21.2	21.5	22.6	22.0	19.6	19.0	20.8	22.8	22.7
Coal	—	—	—	—	—	35.5*	37.6*	37.5*	37.7*	37.8*
Overall	33.2	32.1	33.3	34.2	34.4	34.2	34.4	34.5	35.1	35.1

*includes native coal.

Station Staff Numbers per MW of Installed Capacity

Year	Peat	Oil	Gas	Coal
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	—
1986 (9 Mths)	2.05	0.49	0.45	—
1987	1.96	0.59	0.46	0.46
1988	1.89	0.58	0.46	0.46
1989	1.95	0.58	0.46	0.50
1990	1.91	0.58	0.46	0.49

Age of Generating Plant at Year-End 1990

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	—	—	—	620
Peat	—	90	40	—	40	150	150	470
Gas	—	*505	*655	240	—	—	—	1,400
Hydro	—	1	—	292	—	—	219	512
Coal	610	305	—	—	—	—	15	930
Total MW	610	901	1195	652	40	150	384	3,932

*Combined cycle plant at Marina and North Wall incorporates refurbished steam turbines.

Frequency Range (Hertz)

Year	Frequency Range	Year	Frequency Range
1981/82	49.82 to 50.18	1986 (9 mths)	49.82 to 50.18
1982/83	49.79 to 50.21	1987	49.81 to 50.17
1983/84	49.78 to 50.22	1988	49.87 to 50.13
1984/85	49.80 to 50.20	1989	49.89 to 50.11
1985/86	49.82 to 50.18	1990	49.91 to 50.09

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

OPERATIONS

Generation Statistics for 1990

STATION	Year 1990			Year 1989
	Generated Million Units	Station Use Million Units	Sent Out Million Units	Sent Out Million Units
Ardnacrusha	289.5	2.7	286.8	310.1
Erne	273.5	3.1	270.4	240.9
Lee	69.1	1.2	67.9	78.3
Liffey	30.0	1.3	28.7	23.7
Clady	17.3	0.1	17.2	14.9
Moneypoint	5,839.4	404.5	5,434.9	5,468.2
Arigna	56.3	4.1	52.2	42.3
Poolbeg	1,814.5	94.5	1,720.0	1,268.2
North Wall	397.9	9.1	388.8	861.3
Aghada	1,530.5	69.6	1,460.9	1,447.3
Marina	489.8	5.7	484.1	405.2
Tarbert	872.6	58.5	814.1	543.1
Great Island	133.5	11.8	121.7	22.3
Shannonbridge	625.2	58.8	566.4	515.4
Lanesboro	582.1	46.1	536.0	410.4
Ferbane	330.7	30.0	300.7	295.9
Rhode	325.2	26.1	299.1	311.0
Bellacorick	238.7	17.0	221.7	184.9
Allenwood	58.2	4.3	53.9	48.3
Cahirciveen	18.7	2.0	16.7	9.5
Gweedore	6.2	0.7	5.5	7.1
Turlough Hill (Generating)	285.5	3.9	281.6	294.8
Turlough Hill (Pumping)	-405.8	—	-405.8	-434.0
Purchased from Small Suppliers	16.8	—	16.8	15.0
System Demand	13,895.4	855.1	13,040.3	12,384.1
Maximum Daily Generation — Million Units			49.0	46.0
Maximum Load Generated in MW			2,600	2,466

Note: System Demand is total units generated by all stations including Turlough Hill (generating) and Units Purchased, less Turlough Hill (pumping).

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Particulars and Performance of Generating Plant (Thermal Stations)

Station	Plant Particulars					Plant Performance 1990			
	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	221.7	68.3	3.713	5.218
Ferbane A	3	60	3	300	Milled Peat	166.6	35.4	4.486	6.674
Ferbane B	1	30	1	130	Milled Peat	134.2	55.4	3.451	5.261
Shannonbridge	3	125	3	522	Milled Peat	566.4	57.3	3.340	4.491
Lanesboro	2	85	2	349	Milled Peat	536.0	78.4	3.124	3.897
Allenwood	2	40	4	273	Sod Peat	53.9	16.7	3.508	8.050
Cahirciveen	1	5	1	28	Sod Peat	22.2	28.5	3.918	10.498
Gweedore	1	5	1	28	Sod Peat				
Rhode A	2	40	2	191	Milled Peat	151.0	47.1	3.841	5.522
Rhode B	1	40	1	173	Milled Peat	148.1	45.9	3.146	4.861
Moneypoint	3	915	3	2808	Coal	5,434.9	73.1	1.217	1.680
Arigna	1	15	1	75	Coal	52.2	42.9	6.447	9.218
Great Island	1	120	1	250	Oil	121.7	12.7	1.930	4.684
Marina	1	30	1	132	HR**	484.1	48.8	1.730	2.900
	1	85	Combustion Turbine		Gas				
Aghada	1	270	1	800	Gas	1,460.9	63.1	1.743	2.148
	3	255	Combustion Turbines		Gas/Oil		1.9		
Poolbeg	3	510	3	1560	Gas/Oil	1,720.0	40.4	1.740	2.414
Tarbert	2	500	2	1600	Oil	814.1	20.0	1.736	3.169
North Wall	1	104	Combustion Turbine		Gas/Oil	388.8	3.0	1.814	3.277
	3	42	1	174	HR**				
	1	104	Combustion Turbine		Gas/Oil		29.1		

Excludes 8 x 60 MW Decommissioned units in long term storage — Great Island (2), Marina (1), Ringsend (3), Tarbert (2), and other plant being retired — Ringsend (3 x 30 MW), Lanesboro (20 MW), Milltown Malbay (5 MW), Marina (3 x 20 MW Boilers), Screeb (5 MW).

* Works costs 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.

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Particulars and Performance of Generating Plant (Hydro Stations)

Station	Standard Annual Generation million units	Plant Particulars		Plant Performance for 1990		
		Generating Sets		Units sent out millions	Plant load factor %	Works cost per unit sent out (pence)
		No.	Capacity (MW)			
Ardnacrusha	315	5	86	286.8	38.4	1.547
Pollaphuca	45	2	30	14.5	5.7	5.572
Golden Falls		1	4	4.7	10.6	
Leixlip		1	4	9.5	27.8	
Cliff	275	2	20	81.3	46.6	1.043
Cathaleen's Fall		2	45	189.1	48.0	
Carrigadrohid	77	1	8	18.7	27.4	3.780
Inniscarra		2	19	49.2	30.1	
Clady	13	1	4	17.2	49.5	1.488
Turlough Hill — Pumped Storage	—	4	292	281.6	—	—

Peak Load Trends

Year	MW	Year	MW
1981/82	1,999	1986 (9 mths)	2,178
1982/83	1,924	1987	2,351
1983/84	1,994	1988	2,313
1984/85	2,092	1989	2,466
1985/86	2,130	1990	2,600

System Demand Trends

Year	Million Units	Year	Million Units
1981/82	10,386	1986 (9 mths)	8,657
1982/83	10,194	1987	12,491
1983/84	10,559	1988	12,563
1984/85	10,973	1989	13,187
1985/86	11,465	1990	13,895

Generating Plant Availability

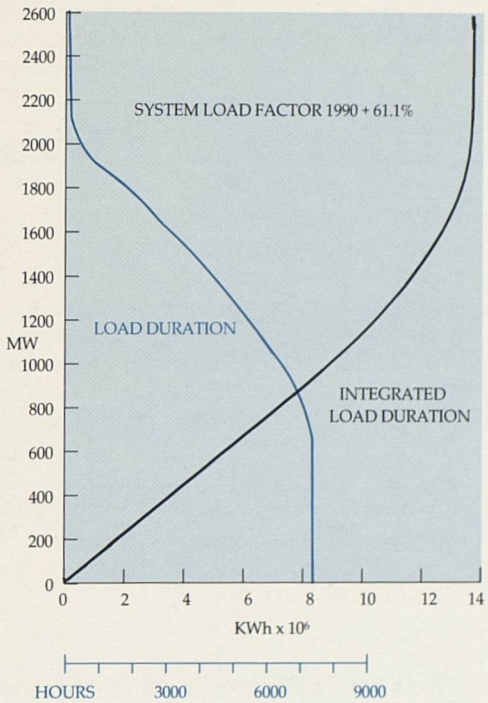
Year	Availability %	Year	Availability %
1981/82	74.1	1986 (9 Mths)	73.2
1982/83	74.6	1987	74.7
1983/84	76.0	1988	76.8
1984/85	78.6	1989	76.9
1985/86	75.5	1990	78.0

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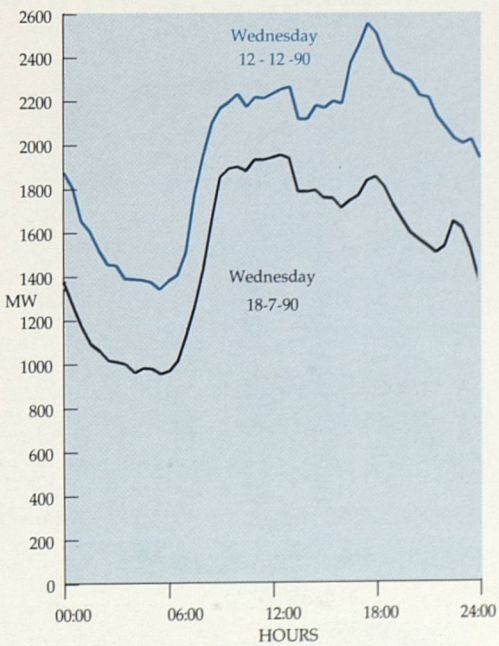
Weekly Energy Sources (GWh)

Week	Hydro	Peat	Gas	Coal	Oil
1	18.8	42.9	68.8	139.9	0.7
2	17.9	51.0	73.0	144.4	3.1
3	20.7	48.6	72.0	147.8	0.0
4	28.3	43.8	73.4	146.7	2.0
5	33.7	41.4	72.1	122.8	24.9
6	32.9	42.4	69.3	135.2	11.6
7	32.5	48.0	92.6	92.5	33.4
8	33.0	61.4	80.5	98.8	15.4
9	32.8	58.3	81.7	84.2	42.3
10	29.8	57.8	72.9	129.8	0.6
11	29.2	54.0	64.3	131.7	0.8
12	23.1	54.7	57.5	134.1	0.0
13	14.2	49.7	68.4	142.8	0.0
14	10.0	38.5	72.5	143.6	15.0
15	7.5	36.5	81.9	124.0	20.3
16	11.2	40.9	83.6	92.2	35.4
17	6.6	32.8	85.5	92.1	48.9
18	5.1	29.7	91.9	57.9	67.9
19	4.0	34.7	72.1	85.1	58.3
20	3.4	34.2	83.6	92.7	39.0
21	1.8	33.6	80.6	93.2	39.2
22	1.7	37.0	62.6	95.8	53.6
23	1.8	34.6	40.8	46.1	112.9
24	2.2	44.0	78.1	48.2	73.8
25	2.0	51.3	83.3	58.9	48.4
26	4.4	40.8	69.9	83.4	46.2
27	10.1	42.5	62.0	79.3	52.0
28	7.5	40.7	83.2	83.6	31.6
29	4.4	41.8	53.8	110.8	29.0
30	1.7	40.5	43.7	117.2	27.2
31	2.6	40.1	56.5	109.4	13.6
32	0.5	36.9	76.1	94.5	8.3
33	1.2	50.0	105.0	49.1	32.2
34	1.9	41.0	113.4	62.0	34.5
35	3.9	39.4	96.8	96.0	16.3
36	6.7	36.0	97.7	96.8	16.4
37	2.4	33.5	72.7	120.5	23.9
38	3.3	33.9	30.9	144.1	51.9
39	3.6	31.3	26.5	145.1	59.3
40	7.5	33.7	67.2	145.6	14.9
41	16.0	41.6	73.1	142.4	1.2
42	16.1	47.7	60.0	144.1	8.3
43	16.5	49.3	49.6	140.8	20.3
44	22.8	44.9	69.1	133.2	4.9
45	15.8	49.6	85.1	129.4	16.1
46	14.1	40.1	97.7	133.9	4.0
47	22.5	37.4	88.7	146.2	10.3
48	20.7	40.0	85.1	151.0	15.1
49	15.2	40.0	88.5	133.4	35.8
50	10.3	37.5	74.5	146.7	56.0
51	13.7	40.2	85.2	149.0	29.3
52	29.8	32.6	57.7	127.9	0.0

Duration and Integrated Load Curves



System Daily Load Curves 1990



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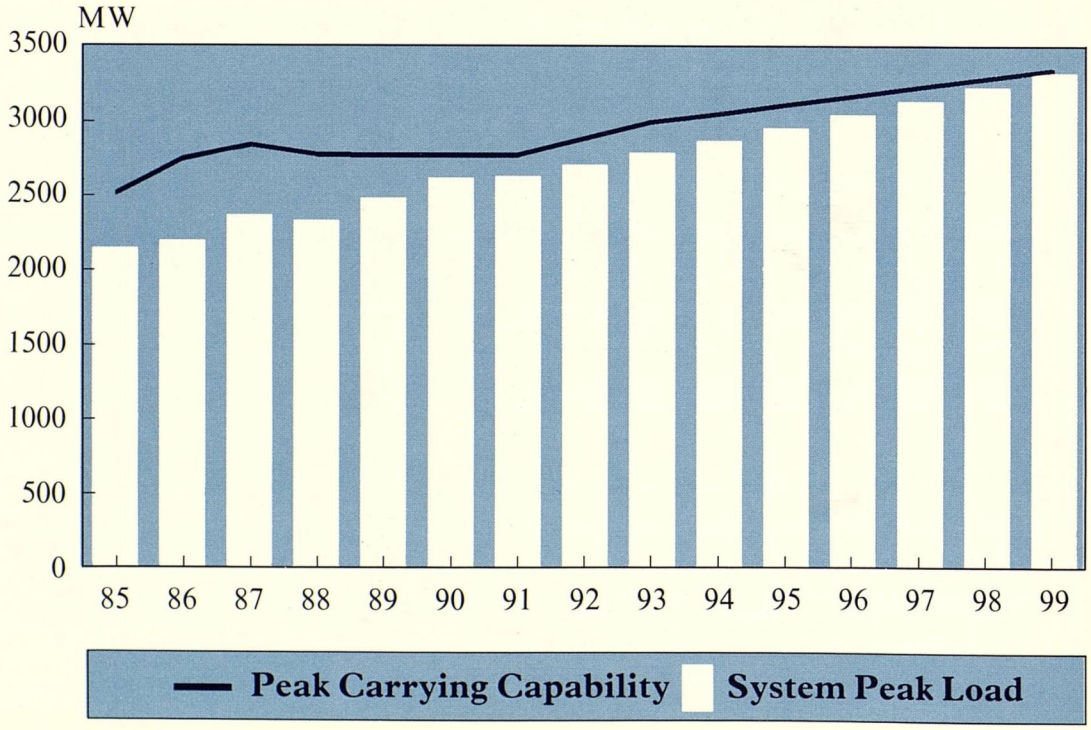
Peak Carrying Capability (PCC)

For any electricity generating system there is a maximum or a peak demand which can reliably be met over a given time period, usually one year. This limit is called the Peak Carrying Capability (PCC) and it is never as high as the total installed generation capacity of the system. Firstly there is a need to have certain generation units on reserve to provide security against the break-down of units which are generating. This amount of plant on reserve has to be deducted from the total installed capacity. There is also the fact that different generation units have different reliability and this is usually influenced by the age of each unit.

There are standard statistical techniques accepted by electricity companies world-wide to calculate PCC. PCC is a most important factor in the advance planning of construction programmes for new generation plant. Other factors are, existing surplus capacity, capacity which is mothballed and capable of being refurbished for further service, forecasts of increases in peak demand for 10/15 years ahead, construction lead times. The planning of advance system development programmes is a complex and sophisticated exercise which, above all, has to have flexibility to respond to unplanned, unexpected changes in such matters as demand growth, international oil markets and international financial developments.

The graph below shows the PCC of the generation system of ESB up to the year 2000. It is growing through the refurbishment and return to service of mothballed plant, through improvements in the availability standards of thermal plant and through increasing the production capacity of existing units. The graph also shows the growth in electricity demand over the same period at a rate of 3% per annum. The graph represents the most optimistic outcome to ESB strategic planning and if things work out that way new plant will have to be constructed and ready for commissioning in 1999.

Peak Carrying Capability of ESB Generating Plant




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