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R. O'CONNOR, J. A. CRUTCHFIELD and B. J. WHELAN

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SOCIO-ECONOMIC IMPACT OF THE CONSTRUCTION OF THE ESB POWER STATION AT MONEYPOINT, CO. CLARE

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General Summary

One of the responsibilities of the ESB is to ensure that at no time will the state be short of electricity, particularly for economic development. To meet its targets during the next decade the strategy is to install short lead-time gas turbine plants, extend some of the peat-burning plants in the midlands and erect a large 900MW coal fired plant at Moneypoint in Co. Clare. This new power station represents a development of major proportions in a relatively isolated part of the country.

Planning permission, which lays down very stringent environmental and other conditions, has been obtained from Clare Co. Council for the Moneypoint plant. The initial Planning Application is for the installation of three 300MW turbo-alternators served by three coal-fired boilers of suitable capacity. It is intended to commission the first two units in 1985 and 1986 respectively. Two 200–225 metre high concrete chimneys will be constructed. One chimney will serve two boilers, the other will serve the third and has ample capacity for a fourth unit if required.

Construction work which commenced in July 1979 will take approximately nine years. The construction workforce will reach about 900 but the permanent station workforce will be only about 300. Most of the skilled workforce will come from outside the Clare area, but the unskilled workers will be drawn from the local population. It is envisaged that the first 300MW unit will come on load in 1985, the second in 1986 and the third not before 1987.

As one of the conditions of the planning permission, the Co. Council stipulated that the ESB finance a study of the likely economic and social impact on the region concerned with the development. The ESRI was commissioned by Clare Co. Council to undertake this study. In order to advise the research workers on local conditions and to monitor problems as they arose a Steering Committee was set up by the Co. Manager composed mainly of Clare people. The members of the Steering Committee, whose names are listed in Appendix I, have a broad background. They include clergymen, administrators, sociologists, engineers and Co. Council officials. The Chairman was the Co. Development Officer. The terms of reference for the study are set out in Appendix II.

Results

1 The main impact area will be south-west Clare, mainly the rural districts of Kilrush and Kildysart and parts of the rural districts of Ennis and Ennistymon. The population of the assumed impact area in 1979 was 42,000 compared with 43,000 in the remainder of the county.

2 The construction labour force will build up from about 200 in the second half of 1979 to about 900 in the second half of 1982 and remain at around this level until about mid-1986. After that date the construction workforce will decline steadily until 1989 when construction ceases unless it is decided to build further generating plant on the site.

3 A scheme for the supply of water to the site is being initiated. This will be a major extension of the West Clare water scheme. The total cost of the extension, at 1980 prices, is estimated at IR£8.5 million about half of which will be borne by the ESB. The ESB is erecting its own sewage treatment plant on the site.

4 Surveys of the construction workforce showed that 64 per cent of the local workforce on the site were under 30 years of age and almost 50 per cent were under 25 years. The overall average was about one-third under 25 years and a further one-fifth between 26 and 30 years. Only about one-tenth were over 45 years of age. Despite their low average age, just about half the local workers and a somewhat higher proportion of the outsiders were married. Of the married workers from outside the area, an estimated 43 per cent had their spouses living with them in Clare.

5 Many workers work very long hours. Over 50 per cent work for 50 hours or longer per week with over 40 per cent working for over 60 hours.

6 At the time of our surveys in 1980 the average take-home pay of site workers was about IR£120 per week and the estimated take-home pay of all the workers in a week about IR£32,000. Total annual take-home pay of the construction workforce, in 1980 money values, was estimated at IR£1.6 million in 1980, rising to IR£6.0 million in 1984 and falling to IR£247,000 in 1989 (on the assumption that three units will be built). This does not include the pay of the permanent ESB operating staff. The take-home pay of these is estimated to rise from IR£880,000 in 1984 to IR£1.92 million per annum in 1988 (all at 1980 prices) and remain at

this level in subsequent years. Total take-home pay of site workers and station staff over the decade is therefore estimated at IR£46.7 million.

7 It is estimated that materials and services purchased by the ESB and contractors in Clare will be in the region of IR£10 million. The Co. Council will also have to spend considerable sums above normal costs on water, sewerage, roads, etc., possibly IR£2 million per annum on average over the decade (at 1980 prices). Hence, an average of IR£3 million per annum over the period 1980–1989 will probably be spent in the impact area. In addition, extra expenditure of about IR£5 million will have to be incurred on houses for the permanent station staff and IR£1.0m. for schools. Total expenditure on construction materials, therefore, in the Moneypoint impact area, over the period, is estimated at IR£30 million. This, together with the expenditure of the workers, will generate further income in Clare through multiplier effects and it is estimated that total direct, indirect and induced income generated over the decade will be about IR£71 million (also at 1980 prices).

8 The principal beneficiaries of the Moneypoint project from the standpoint of induced consumption spending, will be in retail and wholesale trade, miscellaneous services, transportation and public utilities. Kilrush, Ennis and Kilkee are likely to be the localities which will enjoy the greatest share of the increased trade.

9 Before construction was started at Moneypoint, concern was expressed by some people in West Clare about the impact of excessive drinking in the vicinity of the project and the possibility of increased law infringements in the area. The Scottish studies and the experience with Tarbert and Aughinish Island suggest that these fears have been overstated. There is bound to be a certain amount of irritation at times, but in general, experience in areas similar to south-west Clare is encouraging with respect to rowdyism and crime. In no instance did there appear to be a significant increase in crimes of violence.

10 In other comparison areas analysed the impact of a large industrial development on housing and educational facilities caused more social difficulty than almost any other factor. Given the size of the Moneypoint project there would not appear to be major problems in fields other than housing. The schools have, in general, almost sufficient capacity to accommodate the increases to be expected. It is estimated that only about IR£1 million extra need be spent on school buildings and the present

number of teachers should be sufficient when allowance is made for some closures of smaller schools. It would appear also that medical and other services will not be over burdened.

Housing presents potential problems. During the construction phase the number of outside workers who must be accommodated within a fairly short distance of the site is substantial. This influx will put upward pressure on rents, site values and, hence, on house prices. It may thus have some adverse effects on the lower income groups and probably on the tourist industry though its effect on the latter should be minimal. These effects are impossible to quantify at this stage. While no problems have arisen to date, the real pressure is still to come and it seems that the best means of dealing with it is to disperse the workers over as wide an area as possible. Towards this end a register has been compiled by the Co. Development team and workers are being advised as to where and what kind of accommodation is available. A social worker, paid by the ESB, has been employed by the Clare Social Service Council to deal with the housing and other problems of the workers and their families. Houses will, of course, have to be erected for permanent station staff. The cost of such houses, at 1980 prices, is estimated at about IR£5 million.

Recommendations

1 A mechanism is needed to co-ordinate estimates of need for various types of accommodation and to plan for needed new construction. This requires continued work to define available housing throughout the impact area, to match this against site workers' preferences, and to develop necessary schedules of new construction required. ESB, RHO, the Co. Council, IDA, and private builders should be involved in the planning process.

2 Traffic conditions, particularly on the Ennis–Kilrush road, should be monitored and standby procedures developed to deal with severe problems that may develop from time to time.

3 The Co. Clare road engineering staff has developed recommendations for a realistic road reconstruction programme to deal with problems on the Ennis–Kilrush, the Kilrush–Killimer and other roads in the area. It is estimated that it will cost about IR£14 million, at 1980 prices, to implement this programme. This may appear a very high sum, but by spreading the work over a number of years the cost in any one year should be manageable. The Department of the Environment has now indicated that it has approved a plan for these roads which will be put into operation over the 1981–1985 period as funds become available.

4 Power stations produce large quantities of hot water as a by-product of electricity production. Up to recent years such water has not been used in Ireland, but with the present high cost of energy there has come a realisation that efforts should be made to use it in some productive capacity. The ESB is already investigating the use of heat for both horticulture and fish farming at a number of its stations but a long period of pilot testing will be necessary before decisions on viability can be made. Hence, we cannot, at this stage, make any predictions as to the disposal of the waste heat at Moneypoint or of the income it may generate.

5 A large quantity of coal ash will be produced at Moneypoint which will require expensive storage facilities. It would be of great benefit therefore if this ash could be used for some industrial or structural use. In other countries ash of this kind has been used as road fill and we recommend that experiments be carried out in Clare to test its use for this and other purposes.

6 Given the long lead-time for new industrial development, planning should start now to offset the inevitable decline in employment and income from Moneypoint when construction is completed. Unless local efforts, in co-operation with IDA, generate at least a few new industrial operations in West Clare, moderate to severe increases in unemployment will occur.

7 It might be desirable for the Co. Manager to form a monitoring committee, to deal quickly with unanticipated problems or conflicts that may arise. This need not be a permanent organisation with regular meetings; rather it should meet as needed to ensure prompt and effective action.

8 A much greater need exists for a broad based effort to integrate site workers and their families into the communities where they live. Churches, community organisations, school personnel, the Clare Social Service Council and ESB have a role to play in providing as many avenues as possible into local activities for both construction and permanent Moneypoint personnel.

9 It would be desirable to continue or increase efforts to expand the share of local farmers in rising food purchases in the impact area, particularly in liquid milk, fruit and vegetables. This assistance could include improved marketing, advice on production, grading, and quality, and perhaps organisation of delivery and outlets.

10 The project, though generally favourable in its overall impact, will result in additional economic and social costs not fully compensated by ESB payments to the Co. Council or by other central government assistance.

We recommend, therefore, that the station be valued for rateable purposes, and that the state be asked to make a contribution to the Co. Council in lieu of rates as it does for its own buildings.

11 Our studies indicate a definite preference for houses and flats by site workers. These can be supplied by using existing facilities throughout the impact area and by new construction. The economic and social advantages of wider dispersion of workers appears to outweigh the costs of greater travel time.

12 In view of the inevitable difficulties of forecasting development over a ten-year period, we suggest that the Co. Council consider limited monitoring studies in 1983 or 1984 and at a later date as the plant approaches completion. Additional survey data on local attitudes, changes in social life, housing and effects on local labour markets and agriculture, etc., could be most helpful in achieving the best balance between local benefits and costs from the Moneypoint project.

Introduction

One of the responsibilities of the ESB is to ensure that at no time will the state be short of electricity, particularly for economic development. To meet its targets during the next decade the strategy is to install short lead-time gas turbine plants, extend some of the peat-burning plants in the midlands and erect a large 900MW coal fired plant at Moneypoint in Co. Clare. This new power station represents a development of major proportions in a relatively isolated part of the country.

Construction work, which commenced in July 1979, will take approximately nine years. The construction workforce will reach about 900 and the permanent station workforce will be about 300. The first 300MW unit is scheduled to come on load in 1985, the second in 1986 and the third not before 1987.

As one of the conditions of the planning permission, the Co. Council stipulated that the ESB finance a study of the likely economic and social impact of the development on the region concerned. The ESRI was commissioned by the Clare Co. Council to undertake this study. A copy of the terms of reference for the study is given in Appendix II. The environmental aspects of the generating station were not included in the terms of reference. These have been the subject of a separate report by An Foras Forbartha, and the Planning Permission documents contain a clause that the ESB implement the recommendations contained in that report (see clause 1.16 of Appendix IV of this Report).

In order to advise the ESRI research workers on local conditions and to monitor problems as they arose, a Steering Committee was set up by the Co. Manager, composed mainly of Clare people. The members of the Steering Committee, whose names are listed in Appendix I at the end of the Report, have a broad background. They included clergymen, administrators, sociologists and engineers. The Chairman was the Co. Development Officer, Mr J. K. Vaughan.

Chapter 1

AREAS OF POTENTIAL IMPACT: EXPERIENCE ELSEWHERE

A single large-scale investment can substantially transform the face of a region. It represents a major injection of spending power. It can significantly increase the labour force. It can set up demands for housing, schools and other social facilities. It can put pressure on existing infrastructural facilities such as roads. In addition it can create opportunities for new productive investment, particularly in the development of small scale industry providing goods and services that can most conveniently be supplied locally. In short, such an investment can represent a major discontinuity for a particular region.

Not infrequently in such cases the construction phase can involve a far greater input of labour than at the subsequent operational phase. This is so in the case of a new power plant. In other cases such as the exploitation of a finite natural resource (i.e., oil well or mineral deposit), the entire operation can terminate at some future date once the raw material is exhausted. This can cause a further upheaval unless it is adequately planned for. These factors have given rise to the new and developing field of impact studies.

As part of the study a site visit to several of the oil installations and an aluminium smelter in NE Scotland was carried out and found to be very useful. We also visited the Tarbert and Aughinish Island sites to interview key personnel about economic and social impact of a completed, operating plant and one well into the early construction phase. The Moneypoint impact area was examined in detail by members of the ESRI team at various times.

In this chapter we review some of the major impact studies which have been undertaken abroad. We did not expect, and did not find, case studies that parallel the Moneypoint project and impact area closely enough to serve as a model for this study. What emerged, however, was a generally accepted methodology for assessing economic impact in quantitative terms, and a much fuzzier, largely qualitative, discussion of the potential sources of social friction and change related to the project. These common elements, discussed below, provided the framework for the analysis in the following chapters, appropriately modified to deal with specific characteristics of the Moneypoint plant and the West Clare impact area.

A detailed account of the literature reviewed is not included as this would be superfluous in a report of this kind. A number of studies listed at the end of this Report, proved particularly useful, however. These included the works by A. Varwell and G. A. Mackay (1978) on the Invergordon aluminium plant;

studies by G. A. Mackay and other Aberdeen University faculty of the impact of North Sea oil installations on Scottish communities; the Sphere Consultants' report on impact of the Loch Carron oil drilling platform facility; the Oxford Polytechnic studies of power station impacts at Drax and Sizewell in England; the encyclopedic summary by Summers *et al.* (1976) of American experience with industrial plants in rural areas; the annotated bibliography of published and unpublished papers dealing with the impact of large-scale industrial developments in Britain, commissioned by the North Sea Oil Panel Social Science Research Council; and the concise "cook-book" for assessment of local economic impacts of energy facilities by Bish, *et al.*, (1977).

Economic Impact

The distinction between economic and social impact is somewhat artificial, but does permit a more orderly presentation of potential changes to be expected. Narrowly defined local economic effects of large projects include the following.

1 Direct additions to Income and Employment in the Impact Area

These are made up largely of wage payments to construction and operating personnel plus purchases of goods and services from local suppliers (most of which consists of the value-added by local firms to materials purchased from outside) and payments by the construction agency to local government.

2 Induced Spending in the Impact Area

For rural locations, most of the secondary increase in local incomes will be generated by additional consumption induced by the direct addition to the local wage bill. Additional income may be generated from linkages of the project to suppliers and users, i.e., new firms may find it profitable to locate in the area to provide inputs to the new plant or to process and/or market its output. There will also be complementary expenditure on infrastructural facilities such as roads, houses, water works, sewerage plants, etc.

3 Negative Effects on Local Business

The most frequent problem observed is competition in isolated labour markets, resulting in wage increases, shortages of certain types of labour, or both. Skilled and semi-skilled mechanics, local construction workers, heavy equipment operators, etc., are likely to find project jobs at attractive wages. There is much discussion in the Scottish literature about the possibility of more serious long-term effects if local firms lose their markets because of labour shortages and, therefore, are unable to re-hire workers when project construction is completed.

Concern is also expressed about the possible disruption of craft-type industries and small scale agriculture: in part because of labour shifts, but also because of the incompatability of these traditional occupations with shift work, long hours, and six or seven day weeks.

4. External (and Uncompensated) Economic Costs

Major industrial projects may impose additional costs on the local community that are not readily identified with the project and accounted for in financial settlements. For example, traffic congestion and interruption, more automobile accidents, additional road maintenance, and other added burdens on local government are not direct project costs and may be very hard to quantify in incremental terms, yet, they have a direct bearing on the overall economic impact borne by the local population. Studies of many kinds of large private and public projects in the US and the UK suggest that these additional costs frequently exceed any fiscal benefits to local government.

5. Long-term Changes in Employment and the Labour Force

There are grounds for concern about the persistent tendency, noted in all the cases reviewed, for unemployment rates to equal or exceed initial levels after the project becomes fully operational. The combination of returning emigrants, reduced emigration of school leavers, and outside workers who wish to remain in the area can raise serious unemployment problems when the construction phase of a single large project ends. This is particularly likely if the construction period is long enough to change people's job expectations and to pull more wives into the labour pool. Adrian Varwell (op. cit., p. 20) states that at the time when British Aluminium's Smelter Plant at Invergordon reached full occupational workforce, "unemployment in Easter Ross was at its highest level for 20 years" and that this was largely due to the fact that the construction workers had stayed on in the area in anticipation of getting jobs on the construction phase of another project (one which never, in fact, materialised).

The impact of the operational phase of a large industrial development on the local labour market, in terms of reduction of unemployment and the creation of new job opportunities, will depend to a large extent on the degree of match or mismatch between the skill requirements of the development and the skills available locally. The degree of correlation may be modified in the medium-term by the willingness of the incoming developer to train local labour and the willingness and capacity of local labour to be trained.

Incoming developers, both in Britain and Ireland, usually introduce training schemes which allow many people to develop various skills in trades such as welding. This will enable many unskilled workers to obtain at least semi-skilled status and increase their job opportunities when work on the site

finishes. Positions in the permanent maintenance staff will provide some additional opportunities for site workers also.

Our review of recent experience with industrial development in rural areas points up the fact that it is much easier to identify the categories above than to fill them with appropriate and reasonably accurate members. Direct and induced income and employment effects may vary widely depending on the scale of the project, the speed with which employment builds up, the duration of the construction phase, and the degree of uncertainty about future operations.

The oil-related projects in Scotland represent one extreme. They were very large relative to the impact area; they were built very rapidly – and in each area there is much uncertainty about future demands for their products and the possibilities for linkages to other processing operations that could pick up the slack. The Moneypoint project stands at the opposite pole. It is relatively easy to forecast the timing, level, and duration of each phase of construction of a coal-fired generating plant and to anticipate the decline in local wages and employment as the plant reaches operating status. There is no question of markets for the products, nor is there any chance that changes in technology, international competition or other elements of industry structure would make a large generating plant obsolete for decades.

Uncertainty about future development of "induced" industry in the impact area is much lower than would be the case for a conventional manufacturing plant because both forward and backward linkages are usually very small. Power generating stations purchase only minute amounts in inputs locally as the major input (fuel) is imported. Since the output is marketed through a national grid, there is no economic incentive for even power-intensive industry to locate near the power plant. However, the large quantity of heated water produced as a by-product of the electricity generation could form the basis for some profitable activities. The ash and clinker from the plant might also be used for road building. The use of these by-products are discussed in greater detail in later chapters. Discussion with the IDA, however, indicates that considerable further developments are envisaged for the Shannon Estuary and even though these will have few, if any, linkages with the Moneypoint project they will, if they come to fruition, have an effect on incomes and employment in the region.

Normally multiplier effects on local incomes and employment for power plants and similar developments are largely confined to payments to newly employed local people and outside construction workers and investment in infrastructure. Two characteristics of this stimulus to the impact area are stressed in the literature. The most obvious is that it will last only as long as the construction boom lasts, and may lead to over-investment in new

capacity, particularly in the retail and service trades, if the phase is prolonged enough to provide a false sense of permanence. A study such as this should alert people to this hazard though we are aware that despite warnings about the impermanence of employment, business people can sometimes become optimistic about the future.

Secondly, there is a persistent tendency to over-estimate the size of the multiplier effect. Regional input-output studies (a formal method of tracing all purchases and sales, by category, to and from purchasers and sellers in other categories) provide the soundest method of computing local multipliers. As pointed out in the excellent summary by Bish *et al.*, (1977) however, they may produce overly optimistic figures if the impact area is significantly smaller than the smallest geographic area for which an input-output matrix is available. If a small regional table is to be computed, detailed surveys of all local industries are required to guarantee reasonable accuracy.

Negative effects on local business, primarily because of competition for labour, vary widely among the cases reviewed. In most, the actual disturbance seemed to fall well short of "worst case" expectations. The Sphere Consultants' study of the Loch Carron area did warn of severe losses of labour by a few operations, but these resulted from restrictions that prevented local employers from matching project wage offers. Longer-term effects resulting from changes in working habits and employer-employee relations cannot be documented until much later, but there appear to be few instances where local firms have been forced out of business or have lost markets permanently. (Aberdeen might be an exception, but the scale and duration of oil industry competition for labour there are far greater than in a single plant case.)

Few, if any, negative effects on agriculture are reported in US or UK case studies. This is generally attributed to the chronic over-capacity in farm labour characteristics of static rural areas. The new job opportunities, to the extent that they attract men from the farm, simply reduce a nagging problem. In the Scottish studies, it is noted that rationalisation of farm operations has occurred, partly because the need to support redundant workers was relieved and partly because some of the incomes earned on the project were reinvested in up-grading farms.

The external costs of a large project, often difficult to measure, are a matter of general concern. In the US, a considerable effort has been made to identify and quantify such costs where public projects (e.g., military bases, regional government post offices, large equipment servicing centres, etc.) are involved. Much less effort is likely to be expended if the project is small or is undertaken by private firms. There is general agreement that local governments, businesses, and householders usually bear greater economic costs than are provided in various methods of compensation – particularly if such costs

begin to surface after the project is completed. This would account in part for the frequent comment that enthusiasm for the economic benefits of a new plant tends to be much more restrained as construction activity reaches its peak.

Conclusions Regarding Economic Effects

The above discussion of economic effects tends to emphasise many of the negative characteristics of rural industrialisation. If we are to give a realistic picture of such developments and put things in context, we should not leave the matter at this however, without at the same time outlining some of the positive effects or benefits which can accrue. We summarise below some of the more important advantages.

1 In a clear majority of plant locations the host community experiences population growth, the rate of growth being a function of the size of the industrial undertaking. There is generally a halting of emigration and the possibility of persuading existing migrants to return home. Both as an end in itself and for a number of other reasons such as the possible reversal of the trend of rural depopulation, research workers see the halting of out-migration as a beneficial impact.
2 Rural workers' dissatisfaction with wage work in industry is offset by higher standards of living, shorter hours, probably easier work and greater chances of advancement.
3 Having experienced industrial development a majority of the local citizens usually want more and create pressure for the introduction of further development into the region. Many local residents also express positive feelings about one or other aspect of industrial invasion, for example, population growth, economic diversification, improved local shopping and opportunity for off-farm work. While there are contrary feelings held, the scale usually weighs heavily in favour of optimism and satisfaction.

Social Impact

The literature on social impact is much less specific in terms of the categories to be addressed; not because they are of less concern, but because the potential problems are, by their very nature, closely related to particular communities and particular groups of people. The main social impacts which have been identified in studies of large scale industrial developments have concerned movements of people within, into, and out of the area of study. These movements of population are, in most cases, seen as functions of employment changes and it is in terms of employment creation or destruction that population changes tend to be discussed.

Survey techniques for analysis of social impact prior to actual construction of a project present real problems. It is to be expected that attitudes will change as the full magnitude of the project unfolds (usually at least three or four years after commencement of site preparation). Hence, a series of "mini surveys" over time would produce much more useful results than a large, carefully stratified study at an early stage. It has also been suggested (Finsterbusch and Wolf, 1977) that more useful information can be gained from detailed interviews with community leaders and project officials, backed up by mini surveys, than from extensive surveys of the entire community. This was confirmed by our own experiences; random test interviews indicated little understanding among the general public of the scope and potential effects of the Moneypoint project.

In examining the social effects of large projects most impact studies differentiate between the requirements of the "construction phase" during which the plant or site is prepared, and the operational phase. In the majority of cases this is a useful distinction to make for two reasons:

1 The construction and operational labour forces of the same developments are often made up of different classes of people and significantly different numbers and,
2 the duration of the construction phase is usually known in advance, whereas the length of the operational phase cannot always be predicted. It may be long or short depending on the type of project involved. For a power plant like the Moneypoint project the length could be indefinite, whereas for projects like oil wells or mines the operational span is limited.

In the siting of any large scale industrial development a factor which is often mentioned is the availability of labour, but in very few of the case histories reviewed in the literature is there evidence to suggest that local availability of either skilled or unskilled labour was an important factor in the developer's choice of location. In most cases there is an influx of outside workers giving rise to friction of various kinds.

In order to ease these frictions, local authority responses, particularly in the oil development areas of Scotland, can be categorised into three broad areas of strategic choice namely:

(a) containment and insulation,
(b) integration and absorption and
(c) major social and economic change.

While these strategies may not have been consciously devised and implemented in all areas, a *post hoc* analysis allows most local authorities'

responses to be allocated to one of these categories.[1] The pros and cons of each are discussed below while their applicability to the Moneypoint project is summarised in Chapter 7.

(a) Containment and Insulation

The main objective of this strategy is to prevent local workers and returning immigrants from becoming dependent upon an essentially temporary form of employment so that when the period of construction terminates more workers will not be left in the area than can be absorbed by the creation of new permanent jobs. There is emphasis also on minimising the social effects of a temporary activity by creating and maintaining barriers between the development site workers and the local community to minimise social disruption. It is assumed that as long as easily identified social problems such as drunkenness, violence and prostitution can be kept under control then eventual withdrawal of the workforce will leave the local community socially unchanged. Where this strategy is adopted a large proportion of the construction workforce is usually accommodated in work camps which are designed to provide a full range of on-site facilities with the objective of making the camps as self-sufficient and self-contained as possible. In some cases in Scotland the attempt to insulate the local community has led to workers being flown direct from sites to their permanent homes in Glasgow and other cities for long week-ends and rest periods. In these situations local residents have been prevented to some degree from obtaining employment on the sites or accommodation in the work camps.

The "containment and insulation" strategy has been applied to the construction of oil terminals in the Shetland and Orkney islands in Scotland. It would only appear to be appropriate where the construction relates to a single facilitity over a limited period of time; and even then it is not clear that it can really be made effective.

(b) Integration and Absorption

This strategy is also aimed at minimising social change in an area, but is more positive than containment and insulation. Emphasis here is given to the benefits that can accrue to the local community in terms of regeneration or revival of existing social and economic systems. The objectives of the policy are likely to include the halting or significant reduction in the rate of out-migration in an area together with an attempt to limit the recruitment of outsiders. The local authority tries to ensure that any development goes ahead in

[1] See, for example, "Social Consequences of Oil Development – Summary of Aberdeen University Research Reports," Central Research Unit, Scottish Development Department, St. Andrew's House, Edinburgh, EH1 3TB.

a way which respects, and is compatible with, the values of the local community. Thus the development strengthens the existing social and economic basis without bringing about major changes.

An integration and absorption strategy has been adopted in relation to several oil service bases in Scotland with the objective of creating a limited number of long-term jobs and thus making a valuable contribution to population retention and economic diversification. A somewhat similar strategy has been adopted in the island of Lewis in relation to a small oil platform fabrication yard, even though the lifespan of the yard as such cannot be regarded as long-term. The aim here is to diversify gradually into marine fabrication and engineering.

To achieve the objective of integration and absorption at Lewis, recruitment policies, agreed jointly between the Company and the local authority, have given preference to the local residents and returned migrants. A housing policy has also been formulated by which new housing would be spread among the settlements along the rural west coast of the island.

The small scale of the fabrication yard means that the problems associated with the rapid build-up of incoming labour may be avoided, but the success of the regeneration policy rests on the long-term lifespan of the yard, which is not assured. In this situation it is too early to ascertain the effect of Lewis offshore on traditional social patterns which are an important and valued aspect of the way of life on the island. The policy, however, is one of safeguarding the social environment while strengthening and improving the existing employment and industrial structure.

(c) Major Social and Economic Change

This strategy calls for a deliberate policy of using industrial development as a force for achieving major social and economic change. The aim is to change the industrial and occupational base of the area from primary activity to manufacturing. A large increase in the permanent population is to be anticipated with significant repercussions for the amount and type of infrastructure and social services which the local authority will have to provide. If large scale in-migration takes place then, apart from housing, the services most likely to be under pressure are those associated with providing for the needs of young families – especially in the fields of health care, leisure and recreation, education and social work.

Such demographic and industrial changes can be expected to lead to new patterns of industrial relations, a change in the form of distribution of local political power and changes in the status systems of local communities. The strategy may ultimately lead, even if it is not intended, to the creation of an urban industrialised workforce. The relations between the incoming and

original populations are likely to be particularly sensitive if economic growth slows down or declines. In these circumstances the incomers, possibly consisting of managers and skilled workers, may be subject to local hostility, especially if they fare more favourably than the local population, consisting largely of semi- and unskilled workers.

A policy based on "major social and economic change" is clearly only suitable for an area identified as a focal centre for major industrial development. One such area is Easter Ross in the Moray Firth area of Scotland which, as far back as 1948, was designated for industrial development based on hydro-electric power. The first major industrial development in the district did not come, however, until 1969 when British Aluminium built a smelter at Invergordon which now employs 950 people. The population of the town prior to the construction was 2,000 and the period of construction $2\frac{1}{4}$ years with 3,500 site workers employed. Employment in oil related developments in that area is now over 3,000 people and there are proposals for a number of further developments including an oil refinery at Nigg close to one of the largest oil platform fabrication plants in the country.

The expectation that these activities would contribute to permanent industrial growth led to the development of a large scale infrastructural programme including public sector building of 2,400 houses over the four years 1973–76 and a high level of capital investment on other infrastructure. There must, however, be severe reservations as to whether oil related activity developed to date in the area is capable of supporting a strategy of "major economic and social change", nor is there convincing evidence that the development to date offers new incentives for other types of industry to locate in the region. At this stage therefore the appropriateness of adopting this policy in Easter Ross must remain unproven.

Other Social Issues

Having discussed briefly the major social strategies which can be employed in catering for rural industrialisation, we now turn to examine certain specific issues encountered. As Summers, *et al.*, (1976) point out, it must not be presumed that all communities or all individuals within a community gain from rural industrialisation. There are, as in all branches of human endeavour, gainers and losers.

Effect on Life Styles and Way of Life

Where the local labour supply is insufficient or unsuitable for the operational requirements of the incoming developer or where the developer wishes to import his own professional and managerial staff, the main impacts on the community are seen not in terms of sheer weight of workers making

temporarily excessive demands on inadequate local facilities but tend to be expressed by the sociologists in terms of the acceleration of change in the "way of life" of the locality.

One such impact of an incoming permanent workforce on an area is the imposition of formal channels of communication upon communities. For example, Shields (1974) in a study of socio-cultural impacts of water resource development in the Santian River Basin, Oregon, states that the incoming migrants have introduced more formalistic, legalistic processes and values which have undercut the more traditional, informal and personal orientations of most community residents. The same sort of impact is identified by Adrian Varwell (op. cit.) in relation to incoming workers and their families in the locality of the Invergordon Smelter. He categorises the process whereby informal channels of communication are replaced by more formal ones, such as the need to advertise the setting up of new societies, social functions, etc., in the local press, the formation of pressure groups, the introduction of unions into previously non-unionised locations and changes in the political relationships and the political structure of a locality. In connection with the last development, Varwell records the emergence in Invergordon of what he calls the "mediator"; i.e., a local person perhaps originating as a leader of the community and gradually becoming a vehicle by which the views, concerns and priorities of the outside world and of the developer in particular are communicated to the local community.

Numerous other more theoretical social effects have been mentioned in the literature. A research team from Aberdeen University's Sociology Department is at work on indicators of social change that can be monitored statistically to provide objective measures of impact, but has published no generally applicable principle to date.

Immediate Relevant Social Issues

Experience in other countries suggests several recurrent aspects of project-induced social impact that can serve as a guide in this study. Obviously, this is not a forecast; the list below simply summarises the concerns most commonly voiced prior to project construction.

1 Friction between locals and newcomers resulting from differences in religion, income, work habits, and leisure time pursuits of the single and married men away from their families who dominate construction crews.
2 Friction resulting from the inevitable crowding of some community facilities: shops, services, pubs, hotels, dances, other social events.
3 Inconvenience in travel as a result of much heavier road traffic, increased use of public transport, and changes in commuting patterns.

4 Disruption of the local labour and housing market.
5 Disruption of customary social life as a result of changed working and commuting hours, changed attitudes toward industrial work, increased incomes (for some but not all), and the shift from church and community-oriented social activity to "specific purpose" facilities.
6 Changes in the age and marital structure of the community with an increased proportion of young married people.

These general descriptions of possible social impact are evaluated with specific reference to the Moneypoint project and the West Clare impact area in Chapter 6. At this point two additional generalisations drawn from previous studies should be made. First, the more lasting negative effects are found in rural areas transformed permanently by a large, continuing shift toward industrial employment – rarely have they been as severe as expected in areas affected by a single large project. Secondly, there is a tendency in every case to emphasise the damaging effects of social change initiated by economic development; but the possibility that changes in community attitudes can be stimulating and productive should also be kept in mind.

It is also important to emphasise that most of the literature reviewed deals with completed projects. Our study, undertaken at a very early stage, must anticipate as well as possible, developments that may occur over a period of perhaps five to fifteen years.

Chapter 2

DESCRIPTION OF MONEYPOINT PROJECT

This site is across the estuary from the present ESB generating plant at Tarbert in Co. Kerry and is located between Kilrush and the Clare entrance to the Shannon car ferry at Killimer, about two miles from Killimer and five miles from Kilrush. Ennis is 30 to 32 miles away depending on the route chosen (see Figure 2.1).

Moneypoint has been chosen for the new station because of the following factors:

(a) To be economic, coal must be imported in bulk carriers which require the depths and type of sea approach available in the Shannon Estuary.
(b) Topography and sub-soil conditions are suitable.
(c) Cooling water is available from the estuary in the required quantities, and
(d) the station can easily be linked to the national electricity system.

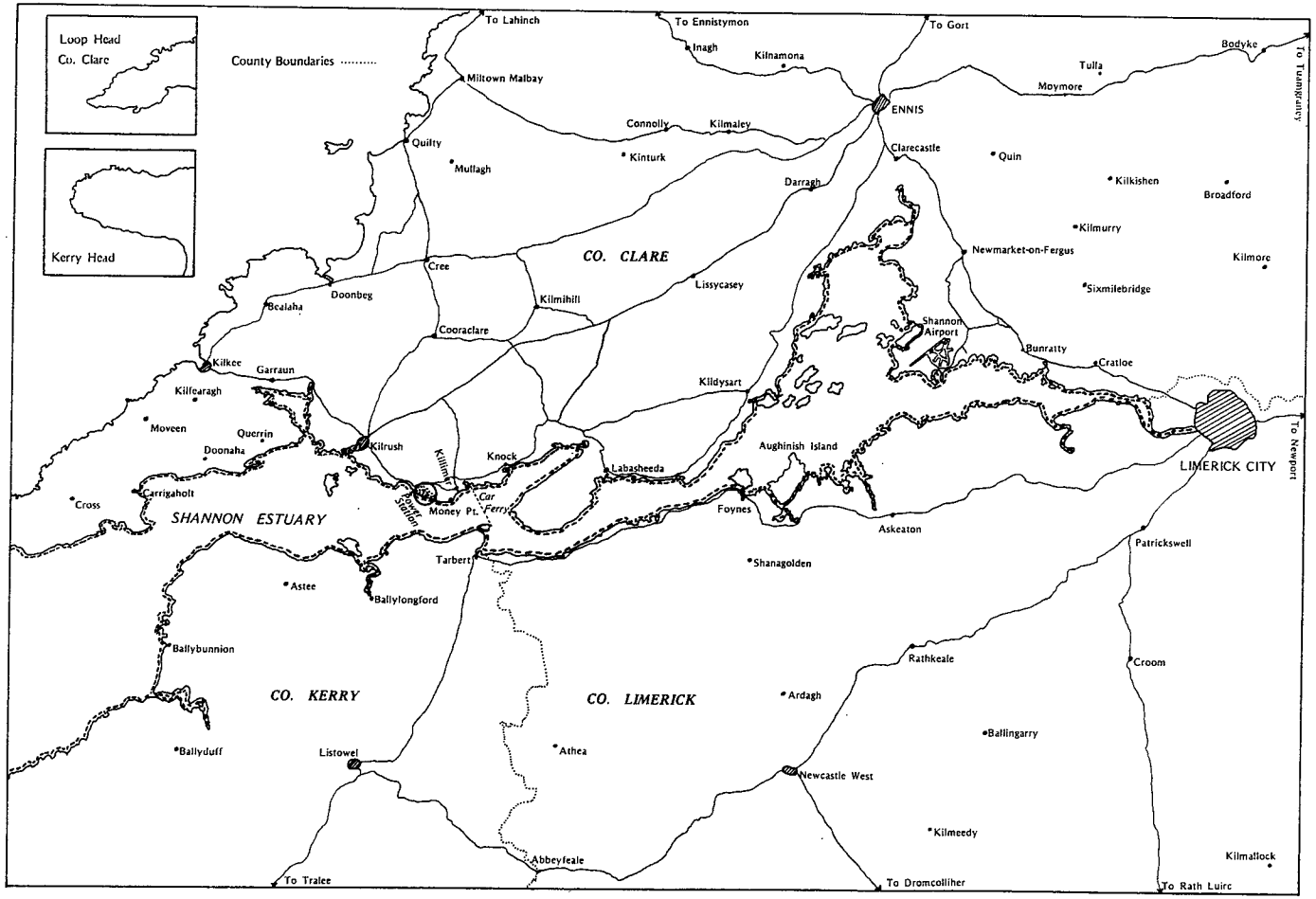
Planning permission, which lays down very stringent environmental and other conditions, has been obtained from Clare Co. Council for the Moneypoint plant. These conditions, taken from the ESB Planning Application and from the Planning Authority's Permission Documents are summarised below. (See Appendix IV at the end of the Report.)

The initial Planning Application is for the installation of three 300 MW turbo-alternators served by three coal-fired boilers of suitable capacity. It is intended to commission the first two units in 1985 and 1986 respectively. Two 200–225 metre high concrete chimneys will be constructed. One chimney will serve two boilers; the other will serve the third and has ample capacity for a fourth unit if required.

Normally the station will run on coal. Under abnormal conditions, e.g., failure of a coal mill, residual oil can be burned to a limited extent in combination with coal. Also small quantities of diesel oil will be burned for starting purposes. At some future date economic and technical factors could make it desirable to convert the plant entirely to oil or gas-burning. In these circumstances it would be necessary to add extra facilities which would be the subject of a separate planning application.

Coal will be unloaded on to a 350 metre long berthing structure suitable for receiving colliers up to 160,000 tonnes. The coal handling facilities comprise (in addition to the berthing structure) unloading equipment, conveyers, control buildings, stacking equipment and a 32 hectare (79 acres) coal store. The total storage capacity of the coal store is 3 million tonnes or 4 years

Figure 2.1 *Moneypoint Impact Area.*



supply for a 300 MW generator. Coal may be purchased from any source world-wide. Major coal producers at present include Australia, Canada, Poland, United Kingdom, USSR and the USA. Two 25,000 tonne capacity steel oil storage tanks for emergency conditions will also be provided.

The cooling water system will comprise a pumphouse, underground concrete culverts and an outfall structure. A fresh water service reservoir of 6 million gallon capacity will hold the station water requirement. Arrangements have been made to obtain this from Clare Co. Council. The fresh water will have to be transferred from a source several miles away and will involve the construction of an underground pipe system. Other buildings and structures are required for water treatment, fire protection, sewage disposal, workshops, administration, canteen, car-parking, etc.

A site of 147 hectares (363 acres) acquired from local land owners is being levelled and graded to accommodate the station. An additional 20 hectares (50 acres) is being reclaimed from the foreshore in the process. This foreshore reclamation is providing accommodation for the disposal of the large quantities of stones and soil removed in the course of levelling and grading the site. It also requires very large boulders, not available locally, for marine protection. These have to be transported by road from outside Ennis and the large trucks carrying them contribute to the heavy repair and maintenance burden on the roads round Kilrush, which has to date involved considerable repair expenses, including a complete restrengthening of the road from Kilrush to the site – a distance of about five miles.

A major problem with large coal burning plants is the disposal of ash. In this case ash from the boilers will be collected in sumps, mixed with water and pumped through pipelines to an ash disposal area well above the water level in the estuary. This area covers 51 hectares (126 acres). Earthen banks up to a maximum height of 13 metres will retain the ash. The water used for transporting the ash will be drained back from the disposal area, passed through a holding pond and chemically treated if necessary before being returned to the estuary.

The number of years the disposal area will last before it becomes filled up depends on the amount of ash and clinker in the coal used; it is estimated to be between 8 and 15 years for a 900 MW plant. In other countries coal ash has been used as a foundation in road construction but so far it has not been used for this purpose in Ireland. It is envisaged, however, that experiments will be carried out to determine if the Moneypoint ash is suitable and economical to use in road building (discussed further in Chapter 5); if so the storage problem could be eased somewhat. The ash is inert and so the disposal area, when filled, can be covered over with soil and made into either farmland or a recreational area. The environmental problems associated with

the development and the methods proposed for dealing with them are outlined in the Planning Permission document in Appendix IV.

Employment and Training

We are informed by the ESB, who have considerable experience in building such stations, that most of the specialist skilled construction workforce will come from outside the Clare area. The work will be done by about 30 separate contractors who specialise in this type of work. These have corps of skilled workers who move round the country (and sometimes to jobs outside the country) as the occasion demands. In the past married men rarely took their families with them on these jobs. They lived in lodgings or in mobile homes during the week and returned home on week-ends. Our first survey suggested that the younger married workers tend to take their wives with them, which gives rise to problems of housing and of integrating the wives into the local communities and making them welcome during their stay. It is possible, however, that the number of wives living near the site was unusually high at the time of the survey because of the numerous workers from Northern Ireland in the JMJ[2] crews then at work. The second survey showed a smaller (but still surprisingly large) proportion of married outside workers with wives living near Moneypoint.

Unskilled workers are usually drawn from the local population but sometimes there are not sufficient local workers with construction experience available and these also have to be brought in from outside. It is envisaged, however, that while there will be sufficient unskilled workers in the local area for the Moneypoint construction it will be necessary to bring in some experienced men from outside from time to time. Applications to date from local people are in excess of requirements even though a large alumina plant currently under construction in Aughinish Island on the Limerick side employs some Clare workers. Total employment on the latter work over the coming years will be about 3,000 workers.

An interesting and useful feature of ESB construction work is the opportunity it provides for training of local unskilled workers. In some cases workshops are provided by contractors to develop particular skills needed (e.g., welding). Some of these men will go on to develop higher skills and may finish up in very highly paid employment on other sites both at home and abroad. Others will remain in the area when the construction work ceases and either set up their own business or enter local industry. The project offers people the opportunity to acquire skills on the job that will be valuable to themselves and the community.

[2]Name of site development contractor.

Profiles of the construction workforce, classified by work activity and by skill are given in Tables 2.1 and 2.2.[3] These data relate to the construction of three 300 MW units. Table 2.1 shows that the construction labour force will build up from about 200 in the second half of 1979 to about 900 in the second half of 1982 and remain at around this level until about mid-1986. After that date the construction workforce will decline steadily until 1989 when construction ceases, unless it is decided to build further generating plant on the site. (The site could accommodate additional units to 2,400 MW capacity.)

Table 2.2 shows the type of skills required on the site at various phases of the work. During the site development stage there is a fairly heavy concentration of drivers operating the earth moving equipment. Once building commences, however, a wide variety of skills will be required, the numbers in any class depending on the type of work in operation at a particular time. However, at most times from one-fourth to one-third of the labour force will be unskilled manual workers, i.e., general operatives.

Employment at the site will be characterised by a high turnover of workers of different kinds. Drivers in sizeable numbers will only be required for a very short period in 1979/80 and then leave. Carpenters will reach a peak towards the end of 1981, remain at a fairly high level in 1982 and then decline fairly rapidly until at the end of 1984 there will be only 12 left. Laggers and electricians will be required in large numbers from 1984 to early 1987 but steel erectors will only be required in large numbers in 1981 and 1982. Of course one group of people will be replaced by others but on the whole it will be a rather unstable situation. With a rapid turn-over of people the incoming workers and the local population will never get to know one another very well. This situation could give rise to some social and economic problems, but, as this study concludes, the problems can be mitigated and the advantages of the project maximised through local initiative.

[3]The ESB station staff are not given in these tables. These staff will build up from 72 in 1984 to 300 in 1989 (see Table 6.1).

Table 2.1: *Site labour predictions for construction* of three units at Moneypoint generating station, classified by type of activity, 1979–1989*

	1979		1980		1981		1982		1983		1984		1985		1986		1987		1988		1989	
Activity	*June*	*Dec.*	*June*	*Dec.*	*June*	*Dec.*	*June*	*Dec.*	*June*	*Dec.*	*June*	*Dec.*	*June*	*Dec.*	*June*	*Dec.*	*June*	*Dec.*	*June*	*Dec.*	*June*	*Dec.*
Site services (construction)	20	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Site development	100	150	150	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Main foundations	–	–	100	100	100	100	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Steel storage	–	–	–	10	10	10	10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Steel erection	–	–	–	–	100	100	100	100	40	–	–	–	–	–	–	–	–	–	–	–	–	–
Main civil contract	–	–	–	–	30	100	120	120	120	100	60	60	60	60	60	60	60	–	–	–	–	–
Cooling water system	–	–	–	–	80	80	80	80	110	50	50	–	–	–	–	–	–	–	–	–	–	–
Jetty	–	–	–	100	100	100	100	60	50	50	50	–	–	–	–	–	–	–	–	–	–	–
Coal store	–	–	–	–	–	60	60	60	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Chimney	–	–	–	–	–	40	40	40	30	–	–	–	–	–	–	–	–	–	–	–	–	–
Administration building	–	–	–	–	–	–	–	30	40	40	–	–	–	–	–	–	–	–	–	–	–	–
Painting	–	–	–	–	40	40	40	40	40	40	40	40	–	–	–	–	–	–	–	–	–	–
Turbine and boiler	–	–	–	–	–	–	60	120	180	230	270	300	300	300	250	250	100	100	–	–	–	–
Aux. plant	–	–	–	–	–	–	–	–	50	100	100	100	100	100	100	50	50	50	50	–	–	–
Insulation	–	–	–	–	–	–	–	–	–	–	50	100	100	100	100	100	50	–	–	–	–	–
Steam and feed	–	–	–	–	–	–	–	–	–	–	50	100	100	100	100	100	–	–	–	–	–	–
Electrical/other site services	10	10	15	20	30	30	80	130	130	180	180	180	180	180	180	180	180	130	95	95	50	–
Sub contractors	–	–	–	–	20	20	20	20	20	20	20	20	20	20	20	20	20	–	–	–	–	–
ESB site staff (construction)	20	20	25	25	40	40	60	60	60	60	60	60	60	60	60	60	60	60	30	30	15	15
Total	150	220	330	255	550	720	770	860	870	870	930	960	920	920	870	820	520	340	175	125	65	15

*Permanent operating staff not included here; the numbers of these are given in Table 6.1.

Table 2.2: *Site labour predictions for construction of three units at Moneypoint generating station, classified by category of worker, 1979–1989*

	1979		1980		1981		1982		1983		1984		1985		1986		1987		1988		1989	
Category of workers	*June*	*Dec.*	*June*	*Dec.*	*June*	*Dec.*	*June*	*Dec.*	*June*	*Dec.*	*June*	*Dec.*	*June*	*Dec.*	*June*	*Dec.*	*June*	*Dec.*	*June*	*Dec.*	*June*	*Dec.*
General operatives	40	70	110	105	173	275	275	293	280	240	247	258	240	240	228	218	136	121	83	45	25	–
Carpenters	5	10	35	35	50	87	70	76	64	30	17	12	12	12	12	12	–	–	–	–	–	–
Drivers	50	75	75	5	22	29	28	25	14	4	4	4	4	4	4	4	4	4	–	–	–	–
Steel erectors and cladders	–	–	10	15	75	88	80	82	26	12	6	4	–	–	–	–	–	–	–	–	–	–
Painters, fitters and welders	6	10	13	13	42	42	72	83	116	187	195	204	185	185	162	152	60	20	5	5	–	–
Plant erectors	–	–	–	–	–	–	9	18	39	97	110	100	100	100	92	79	20	10	–	–	–	–
Laggers and electricians	–	–	2	2	4	4	25	50	50	75	105	135	135	135	135	135	105	50	37	25	25	–
Contractors' staff	16	22	37	29	84	95	82	103	150	95	126	123	124	124	122	105	80	20	–	–	–	–
Sub contractors	13	13	21	26	60	60	70	70	70	70	60	60	60	60	55	55	55	55	20	20	–	–
ESB staff (construction)	20	20	25	25	40	40	60	60	60	60	60	60	60	60	60	60	60	60	30	30	15	15
Total	150	220	330	255	550	720	770	860	870	870	930	960	920	920	870	820	520	340	175	125	65	15

Chapter 3

CHARACTERISTICS OF THE MONEYPOINT IMPACT AREA

Figure 3.1 shows that Moneypoint is located on the northern side of the Shannon Estuary close to the boundaries of the three counties, Clare, Kerry and Limerick. The last two are, however, across the estuary from Moneypoint and are not readily accessible to it except by the Killimer/Tarbert ferry. This ferry provides a very good service (operating every half hour in summer and every hour in winter) and as a result a certain number of workers from Kerry and Limerick are coming across to work in Moneypoint. Because of the costs, however, and of interruption of ferry service in bad weather it is expected that the number of such workers will be small, particularly since there is a strong demand for labour on the construction of the alumina plant on Aughinish Island on the southern side of the estuary.

In these circumstances it is our view that the main impact area will be south-west Clare, mainly the rural districts of Kilrush and Kildysart and parts of the rural districts of Ennis and Ennistymon (see Figure 3.1). The principal towns and villages in this area together with their estimated populations in 1979[4] and their distances from the Moneypoint site are given in Table 3.1. The largest towns in the area are Ennis, Kilrush, Kilkee and Miltown Malbay. All the other towns and villages are very small, Kilmihill and Kildysart being the only ones for which populations were given in the 1971 Census of Population.

There may, of course, be spin-off into more distant urban areas in Clare but because of the nature of the roads, many of which are narrow and very winding, workers will be reluctant to travel very far. Kilrush and Kilkee are likely to benefit most, being within five and twelve miles respectively of the Moneypoint works. Ennis will benefit to some extent from the ESB site staff living there, but not so much from the other construction workers. The latter have to start work at 8.00 in the morning, and many work overtime. Hence a drive of 30 miles morning and evening to Ennis is not likely to be acceptable. Accommodation closer to the site is likely to be much more in demand.

Ennis, being the distribution centre of Clare, will, of course, benefit considerably by way of trade. Food, drink and other purchases by the workers are likely to be distributed from Ennis and many workers are likely to visit the town on days off to shop or to attend entertainments. Most of the other towns

[4]Figures for populations of towns comparable with those in 1971 and earlier Census Reports were not collected in the 1979 Census of Population.

Figure 3.1 *Map of Co. Clare showing urban and rural districts*

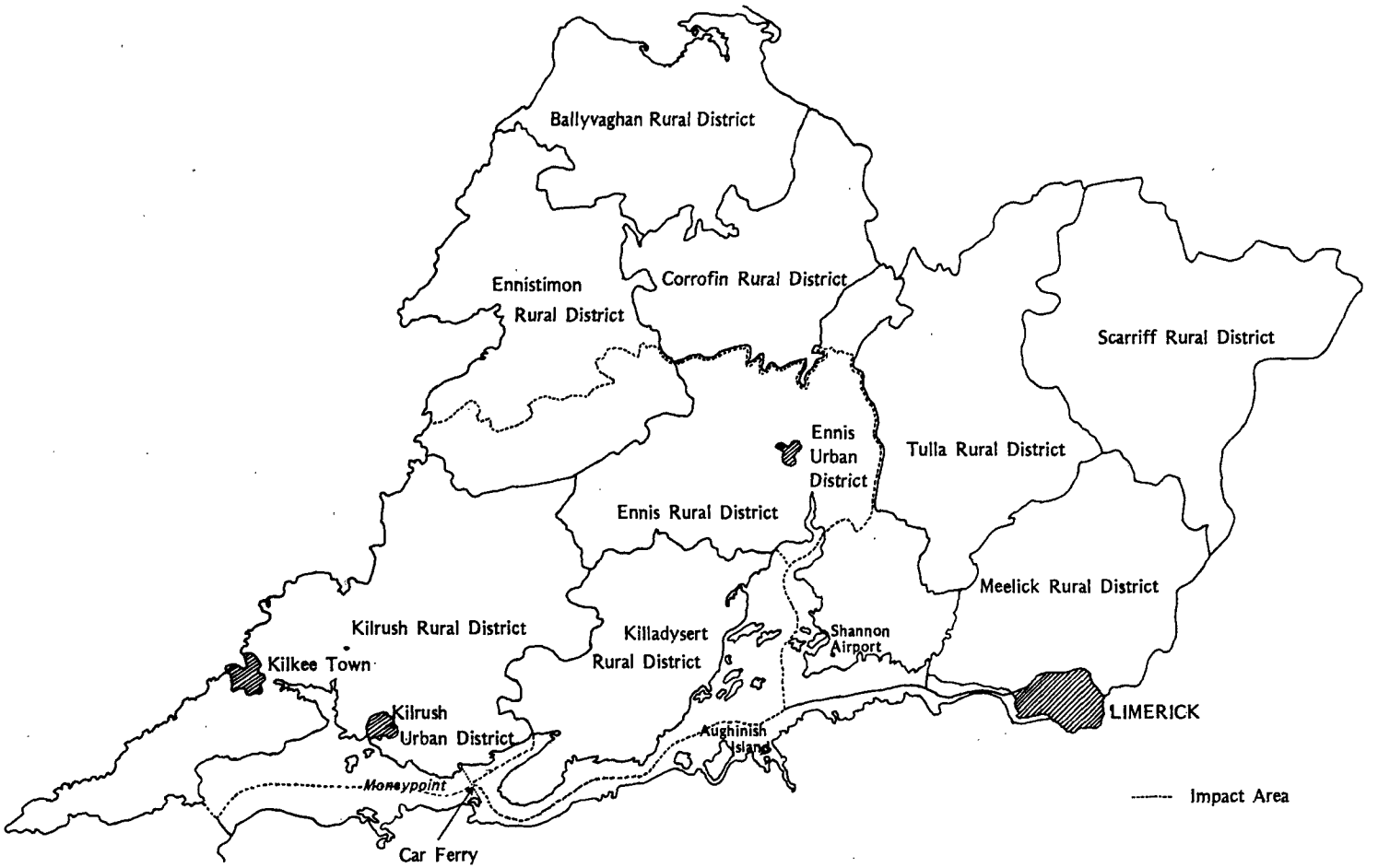


Table 3.1: *Principal towns and villages in the Moneypoint impact area*

Town or village	*Pop. 1979**	*Distance from site (miles)*	*Town or village*	*Pop. 1979**	*Distance from site (miles)*
Ennis and environs	10,840	30	Killimer	<230	1
Kilrush	2,671	5	Knock	<230	4
Kilkee	1,287	12	Labasheeda	<230	9
Miltown Malbay	677	22	Doonbeg	<230	13
Kilmihill	284	10	Doonaha	<230	14
Kildysart	239	9	Carrigaholt	<230	16
Cooraclare	<230	5	Lissycasey	<230	18

< = less than *Population estimated by the authors.

and villages within the impact area will benefit also, though not to the same extent as Kilrush and Kilkee. Site workers will reside in the various small towns if they can obtain suitable accommodation, while many native Clare workers will probably be from these areas.

Due to its distance from the site (over 40 miles) the impact on Shannon Airport town is not likely to be very great. There is a good deal of other work going on in the Shannon/Limerick area and workers in that region will probably prefer to work near home rather than drive to Moneypoint over a series of very winding roads. Limerick, of course, will benefit indirectly as a distribution centre both from expenditure by workers on food, clothing etc., and from purchases of construction materials and equipment by the ESB and the contractors.

In summary, the impact area is defined by the natural boundaries of the sea and the Shannon Estuary to the west and south; by road conditions and sparse settlement to the north; and by the dominance of Ennis and Shannon Airport economic developments to the east.

Population of Clare and of the Impact Area

The population of the different rural and urban districts of Clare in 1971 and 1979, classified by broad age group categories are given in Table 3.2. This table shows that the total population of the county increased from 75,000 to 85,000 in the period concerned or by 13.3 per cent. This increase took place mainly in the urban districts (from 21,000 to 31,000) and was particularly strong in the environs of Ennis, Shannon Airport town and the suburbs of Limerick. Indeed Limerick city has expanded considerably into Clare over the past decade. On the other hand, there was little growth in the urban district of Kilrush or in Kilkee town.

Table 3.2: *Populations of rural and urban districts in Co. Clare, classified by age, 1971 and 1979*

	1971					1979				
	Age group					Age group*				
District	*0–14*	*15–19*	*20–64*	*65+*	*Total*	*0–14*	*15–19*	*20–64*	*65+*	*Total*
Rural districts										
Ballyvaughan	737	212	1,176	408	2,533	660	225	1,176	437	2,498
Corofin	790	232	1,361	416	2,799	883	223	1,381	412	2,899
Ennis RD (rem)	2,772	833	4,890	1,183	9,678	3,215	805	5,202	1,260	10,482
Ennistymon	2,573	839	4,661	1,606	9,679	2,355	761	4,492	1,551	9,159
Kildysart	1,196	420	2,363	764	4,743	1,302	397	2,227	753	4,679
Kilrush RD (rem.)	3,204	960	5,272	1,822	11,258	2,766	903	4,921	1,689	10,279
Meelick RD (rem.)	868	255	1,481	370	2,974	1,149	226	1,662	292	3,329
Scarriff RD	1,545	386	2,712	893	5,536	1,781	418	2,835	920	5,954
Tulla RD	1,363	426	2,485	796	5,070	1,400	410	2,453	792	5,055
Total rural districts	15,048	4,563	26,401	8,258	54,270	15,511	4,368	26,349	8,106	54,334
Urban districts										
Ennis Urban District	1,860	555	3,009	548	5,972	1,937	613	3,112	617	6,279
Environs of Ennis	1,508	341	2,374	645	4,868	2,800	511	3,994	1,070	8,375
Shannon Airport town	1,537	180	1,908	32	3,657	3,083	577	3,599	119	7,378
Kilrush Urban District	840	240	1,237	354	2,671	897	228	1,237	416	2,778
Kilkee town	300	119	641	227	1,287	331	85	650	243	1,309
Limerick environs	703	183	1,149	248	2,283	1,543	529	2,231	163	4,466
Total urban districts	6,748	1,618	10,318	2,054	20,738	10,591	2,543	14,823	2,628	30,585
Total Clare	21,796	6,181	36,719	10,312	75,008	26,102	6,911	41,172	10,734	84,919

*1979 age group figures for rural and urban districts were calculated from data supplied by the Central Statistics Office based on the 1979 Census of Population.

Source: Census of Population, Volume 1, 1971 and 1979.

Table 3.3 shows that the population of the assumed impact area in 1979 was 42,000 compared with 43,000 in the remainder of the county. The growth in the impact area, however, since 1971 has been slower than in the remainder – from 39,000 to 42,000 compared with 36,000 to 43,000 (i.e., 7 per cent as against 20 per cent respectively). The slow increase in the impact area is related to its location in west as against east Clare. The declines in the number of people in the rural areas of Kilrush, Kildysart and Ennistymon and the very slow growth in the towns in these areas has tended to offset increases in the Ennis environs. On the other hand, the strong growth in the environs of Limerick and Shannon Airport town has been supplemented somewhat by growth in the rural population of East Clare.

Population Densities

Population densities per square mile in 1979 for the different urban and rural districts and for the impact area are shown in Table 3.4 together with comparable figures for some rural districts across the Shannon in Kerry and Limerick. For Clare as a whole the population density is about 69 persons per square mile which compares with about 66 per square mile for Kerry (a very mountainous county) and 152 for Limerick, a county with a large city. For the impact area the density is about 87 persons per square mile, varying from 166 in the Ennis urban and rural districts to about 48 and 61 respectively in Kildysart and Ennistymon (part of). For the non-impact area the average density is 58 persons per square mile but densities here are as low as 22 in Ballyvaughan and as high as 72 in Meelick rural district, i.e., the area which includes some of Limerick suburbs. Across the Shannon in Kerry and Limerick the population densities in the rural areas tend to be somewhat higher than in Clare. The figures for Listowel and Newcastle are 94 and 90 respectively with 82 for Rathkeale and 67 for Glin. Tralee rural district, because of its fairly large urban centre, has a density of 116 persons per square mile.

The Labour Force

As labour force data were not collected in the 1979 Census of Population we have been forced to make our own estimates based on the numbers in the different age groups in the county and on participation rates in these groups based on the 1977 National Labour Force Survey and the 1971 Census of Population. These estimates are given in Table 3.5. In 1971 the total number of male workers in Co. Clare was 22,500 or 57.7 per cent of the total male population of the county in that year. Female workers in 1971 were 5,500 or 15.3 per cent of the female population. By 1979 it is estimated that the total labour force in the county had increased by 2,500 of which the increase in male workers was about 1,400 and that of females 1,100. The female workers

Table 3.3: *Population of Moneypoint Impact area, 1971 and 1979, classified by age*

	1971					1979				
	Age group					Age group†				
District	*0–14*	*15–19*	*20–64*	*65+*	*Total*	*0–14*	*15–19*	*20–64*	*65+*	*Total*
Impact area – rural										
Kilrush RD (rem.)*	3,204	960	5,272	1,822	11,258	2,766	903	4,921	1,689	10,279
Kildysart RD	1,196	420	2,363	764	4,743	1,302	397	2,227	753	4,679
Ennis RD (rem.)	1,532	460	2,702	653	5,347	1,608	403	2,653	623	5,287
Ennistymon RD (part of)	807	263	1,462	504	3,036	843	259	1,482	424	3,008
Total impact rural area	6,739	2,103	11,799	3,743	24,384	6,519	1,962	11,283	3,489	23,253
Impact area – urban										
Kilrush urban	840	240	1,237	354	2,671	897	228	1,237	416	2,778
Kilkee town	300	119	641	227	1,287	331	85	650	243	1,309
Ennis urban	1,860	555	3,009	548	5,972	1,937	613	3,112	617	6,279
Environs of Ennis*	1,508	341	2,374	645	4,868	2,800	511	3,994	1,070	8,375
Total impact urban area	4,508	1,255	7,261	1,774	14,798	5,965	1,437	8,993	2,346	18,741
Total impact area	11,247	3,358	19,060	5,517	39,182	12,484	3,399	20,276	5,835	41,994
Remainder of county										
Shannon Airport town	1,537	180	1,908	32	3,657	3,083	577	3,599	119	7,378
Meelick and environs Lim.	1,571	438	2,630	618	5,257	2,692	755	3,893	455	7,798
Rem. of Ennis RD	1,240	373	2,189	529	4,331	1,407	401	2,549	838	5,195
Rem. of Ennistymon RD*	1,765	577	3,200	1,101	6,643	1,712	503	3,010	926	6,151
Other Rural Districts	4,436	1,255	7,732	2,515	15,938	4,724	1,276	7,845	2,561	16,406
Total remainder of county	10,549	2,823	17,659	4,795	35,826	13,618	3,512	20,896	4,899	42,925
Total Clare	21,796	6,181	36,719	10,312	75,008	26,102	6,911	41,172	10,734	84,919

*For definitions of certain areas included in impact area see Appendix 3A of this chapter.

†1979 age group figures for rural and urban districts were calculated from data supplied by the Central Statistics Office based on the 1979 Census of Population.

Source: Census of Population, Volume 1, 1971 and 1979, and Bulletin No. 1, December 1980, Central Statistics Office, Dublin.

Table 3.4: *Population densities per square mile in rural and urban districts and in the impact area, 1979*

District	Population			Area square miles	Density per square:	
	Male	Female	Total		Mile	(Km)
*Impact area**						
Kilrush urban and rural	7,543	6,823	14,366	214.85	66.9	(25.8)
Kildysart	2,449	2,230	4,679	97.84	47.8	(18.5)
Ennis impact urban and rural	10,022	9,919	19,941	119.84	166.4	(64.3)
Ennistymon RD (part of)	1,579	1,429	3,008	49.07	61.3	(23.7)
Total impact area	21,593	20,401	41,994	481.60	87.2	(33.7)
Remainder of Clare						
Ballyvaughan	1,296	1,202	2,498	111.92	22.3	(8.6)
Corofin	1,523	1,376	2,899	95.91	30.2	(11.7)
Scarriff	3,105	2,849	5,954	135.35	44.0	(17.0)
Tulla	2,743	2,312	5,055	135.04	37.4	(14.4)
Meelick	4,037	3,758	7,795	107.75	72.3	(27.9)
Ennistymon (part of)	3,253	2,898	6,151	106.56	57.7	(22.3)
Remainder of Ennis RD	6,395	6,178	12,573	56.67	56.7	(21.9)
Total remainder of Clare	22,352	20,573	42,925	749.20	58.5	(22.6)
Total Clare	43,945	40,974	84,919	1,230.80	69.0	(26.7)
Kerry						
Listowel, urban and rural	12,627	11,512	24,139	257.30	93.8	(36.2)
Tralee, urban and rural	20,305	19,790	40,095	346.56	115.7	(44.7)
Total Kerry	62,185	58,171	120,356	1,815.17	66.3	(25.6)
Limerick						
Newcastle RD	10,562	9,739	20,301	224.75	90.3	(34.9)
Glin RD	1,378	1,217	2,595	38.56	67.3	(26.0)
Rathkeale RD	6,807	6,320	13,127	160.20	81.9	(31.6)
Total Limerick	79,302	78,105	157,401	1,036.96	151.8	(58.6)

*For definitions of certain areas included in impact area see Appendix 3A.
Source: Census of Population, Central Statistics Office, Dublin.

Table 3.5: *Estimated labour force (employed and unemployed) in Co. Clare, classified by age and sex in 1979*

	Male					*Female*					*Change 1971–79*	
	1971	*1979*[a]				*1971*	*1979*[a]					
District	*Total*	*Total*	*15–29*	*30–64*	*65+*	*Total*	*Total*	*15–29*	*30–64*	*65+*	*Male*	*Female*
Impact area – rural												
Kilrush RD (Rem.)	3,549	2,893	836	1,807	250	583	807	454	313	40	–656	+224
Kildysart	1,621	1,303	377	814	112	305	363	204	141	18	–318	+58
Ennis RD (Rem.)	1,702	1,479	439	948	92	427	417	238	164	15	–223	–10
Ennistymon (part of)	961	853	250	540	63	188	239	136	93	10	–108	+51
Total rural impact area	7,833	6,528	1,902	4,109	517	1,503	1,826	1,032	711	83	–1,305	+323
Impact area – urban												
Kilrush urban	637	726	210	454	62	268	203	144	79	10	+89	–65
Kilkee town	324	369	105	228	36	133	102	57	39	6	+45	–31
Ennis urban	1,485	1,781	535	1,155	91	725	505	290	200	15	+296	–220
Environs of Ennis	1,027	2,203	647	1,397	159	320	619	351	242	26	+1,176	+299
Total urban impact area	3,473	5,079	1,497	3,234	348	1,446	1,429	812	560	57	+1,606	–17
Total impact area	11,306	11,607	3,399	7,343	865	2,949	3,255	1,844	1,271	140	+301	+306
Remainder of county												
Shannon airport town	959	1,912	599	1,295	18	305	552	325	224	3	+953	+247
Meelick RD	1,630	2,176	667	1,442	67	409	623	362	250	11	+546	+214
Rem. of Ennis RD	1,380	1,979	940	915	124	347	408	230	158	20	+599	+61
Rem. of Ennistymon RD	2,102	1,731	504	1,090	137	410	493	274	187	32	–371	+83
Other rural districts	5,130	4,518	1,309	2,829	380	1,103	1,280	729	490	61	–612	+177
Total remainder of county	11,201	12,316	4,019	7,571	726	2,574	3,356	1,920	1,309	127	+1,115	+782
Total Clare	22,507	23,923	7,418	14,914	1,591	5,523	6,611	3,764	2,580	267	+1,416	+1,088

[a]1979 figures are authors' estimates based on data supplied by the Central Statistics Office and on participation rates by age from 1977 Labour Force Survey and 1971 Census of Population.

had therefore gone up by about 20 per cent compared with a rise in the male workers of only about 6 per cent.

The largest increases in the male labour force took place in the environs of Ennis, Shannon Airport town and Limerick (Meelick RD). It would appear that the other towns in the county barely held their own, while there were declines in practically all the rural areas with particularly sharp drops in the Kilrush and Kildysart rural districts. The estimated increase in the female workers also took place mainly in Shannon and Limerick suburbs but there were also increases in some rural areas. These estimates together with data on industrial employment from the county development officer indicate that employment in Clare has been increasing over the past decade but that most of this has occurred in the non-impact area of East Clare. There has been a slight decrease in the impact area. The gain in male employment in the Ennis region has been offset to a considerable extent by declines in the rural areas, particularly in Kilrush and Kildysart.

As might be expected, the decline in the labour force in the rural areas has been due almost entirely to a drop in agricultural workers. Our estimates (see Table 3.6) show that between 1971 and 1979 the farm labour force in Clare dropped from 12,400 to 9,800 or by 21.5 per cent. The largest declines occurred in Ballyvaughan, Meelick and Kildysart rural districts, the smallest decreases occurred in the rural districts of Corofin and Tulla.

Table 3.6 also shows that in the impact area in 1971 about 41 per cent of the total labour force was employed in agriculture. This compared with 47 per cent for the remainder of Clare and 44 per cent for Clare as a whole. The corresponding figure for the state in that year was about 26 per cent. By 1979 in both the impact area and in the remainder of Clare the agricultural labour force had fallen to about one-third of the total gainfully employed, indicating a substantial change in the employment pattern in the region over the decade. The figure of over 30 per cent employed in agriculture is, of course, still high by national standards and shows that there may be a fairly substantial reservoir of farm people available for work on the Moneypoint site. This is borne out by the data available on the small holder unemployment assistance scheme which shows that on average in Clare in 1979 a total of about 1,400 small holders received assistance under this scheme. This number represents about 15 per cent of the total farm labour force in Clare in that year. The number in receipt of small holder assistance in the Moneypoint impact area in 1979 (estimated from data supplied by the CSO) was 781 which is about 16 per cent of the farm labour force in that area.

Figures based on the live register for average unemployment in the impact area and in Clare as a whole for 1979 show that for the impact area the numbers of males and females on the live register were 1,794 and 285 respec-

Table 3.6: *Agricultural workers in County Clare, 1971 and 1979*

Districts (Rural and urban)	*1971*			*1979*[a]			*Percentage decrease in total*
	Male	*Female*	*Total*	*Male*	*Female*	*Total*	
Impact Area							
Kilrush Rural and Urban	2,776	214	2,990	2,225	172	2,397	19.8
Ennis Rural and Urban	891	78	969	698	61	759	21.7
Kildysart	1,170	77	1,247	896	59	955	23.4
Ennistymon (part of)	610	39	649	483	31	514	20.8
Total impact area	5,447	408	5,855	4,302	323	4,625	21.0
Remainder of Clare							
Ballyvaughan	478	47	525	354	35	389	25.9
Corofin	624	58	682	527	49	576	15.5
Scarriff	961	93	1,054	763	74	837	20.6
Tulla	1,072	100	1,172	939	88	1,027	12.4
Meelick	780	87	867	590	66	656	24.3
Ennistymon (part of)	1,334	84	1,418	1,043	66	1,109	21.8
Remainder of Ennis RD	722	64	786	559	48	606	22.9
Total remainder of Clare	5,971	533	6,504	4,774	426	5,200	20.0
Total Clare	11,418	941	12,359	9,096	749	9,825	21.5
Agricultural workers as percentage of total labour force							
				Per Cent			
Impact area	48.1	13.8	41.1	37.1	9.9	31.1	–
Remainder of Clare	53.3	20.7	47.2	38.8	12.7	33.2	–
Total Clare	50.7	17.0	44.1	37.9	11.3	32.2	–

[a]1979 figures estimated by the authors on the basis of males engaged in agriculture from the June enumerations of crops and livestock carried out annually by the Central Statistics Office.

tively compared with 945 and 182 for the remainder of the county. Figures for the number of males in the labour force, on the live register and in receipt of small farm assistance for the impact area and in the remainder of Clare are summarised in Table 3.7. This table shows that the numbers on the live register in the impact area are 15.5 per cent of the total labour force. If we assume that the numbers receiving small farm assistance are under-employed in farming then the total number unemployed and under-employed as a proportion of the total male labour force in the impact area in 1979 was 22.2 per cent. For the remainder of Clare the numbers on the live register are only 7.7 per cent of the labour force while those on the live register and those receiving small farm assistance are 12.7 per cent of the labour force.

Table 3.7: *Estimated average number of males in the labour force,* on the live register and in receipt of small farm assistance in different regions of Clare in 1979*

Description	*Impact area*	*Remainder of Clare*	*All Clare*
Labour Force			
(1) Agricultural workers	4,302	4,772	9,075
(2) Other male workers	7,305	7,543	14,848
(3) Total male workers	11,607	12,316	23,923
(4) Live register, males[a]	1,794	945	2,739
(5) Small farmer assistance[a]	781	615	1,396
(6) Total (4) + (5)	2,575	1,560	4,135
		Percentage	
(7) (4) as percentage of (3)	15.5	7.7	11.4
(8) (6) as percentage of (3)	22.2	12.7	17.3

*Employed and unemployed.
[a]Central Statistics Office, Dublin.

The conclusion to be drawn from these figures is that there should be sufficient unemployed or under-employed people in the impact area or at least in all of Clare to fill the unskilled and many of the semi-skilled positions during the construction phase of the project. Of course, as is well documented, it is not always the unemployed who get work on such projects. Many people already at work shift to the higher paid construction jobs but this tends to leave openings elsewhere for the unemployed. In any case an estimated peak of 900 workers on the site during the construction phase amounts to less than 8 per cent of the male labour force in the impact area and to 3.8 per cent of the male labour force in all Clare in 1979. Indeed, as stated in Chapter 1, the number of applications from Clare residents for unskilled and semi-skilled jobs on the site is much greater than the number of jobs likely to be available. The number of applications by Clare residents for skilled jobs, on the other hand, is much less than requirements and a high proportion of these workers will have to come from outside Clare. It is expected, however, that a number of native Clare people currently employed on skilled construction work in Britain will return to take up jobs in Moneypoint. There have been many enquiries from such people and a number have already returned.

Transport and Communications

Roads

The planning permission stipulates that all heavy vehicles must go along the Ennis/Kilrush road and through Kilrush to the site. Heavy vehicles are not allowed to approach or leave the site by the Knock/Killimer road. From Ennis to Kilrush, a distance of 27 miles, the road is reasonably straight but there are soft verges and insecure foundations over fairly long stretches of bog and other soft land. This road has stood up surprisingly well to the heavy traffic to date but drivers of loaded vehicles must take care to stay on the paved surface. To do this, speed must be reduced considerably when meeting other vehicles on the narrower stretches, thus holding up lighter following traffic. The congestion could prove frustrating during the tourist season as West Clare, particularly Kilkee, is a very popular tourist area.

Since the start of the Moneypoint project in July 1979 a considerable amount has been spent on the improvement of the Ennis/Kilrush road, particularly in improving the foundations in the boggy areas. This work will have to continue during the construction phase if the road is to remain passable. Road widening in suitable places will also have to be undertaken to allow for overtaking and passing.

The road from Kilrush to Moneypoint (N67), a distance of about four miles was inadequate for the traffic and has had to be completely remade. By filling the drains on either side and repaving, it is now in fairly good condition but is still rather narrow.

The part of the N67 from Moneypoint to the Killimer ferry, though a national secondary road, is still in very poor condition and is urgently in need of improvement. There is likely to be very dense traffic on this road when the site gets fully underway and congestion will be very frustrating. Unless something is done quickly workers living on the eastern side of the site will have difficulty in getting to work at all. Because of congestion round Moneypoint, cars crossing on the ferry will wish to avoid this area. Hence some one or two of the county roads from Killimer to the Ennis/Kilrush road will need realignment also. Detailed suggestions regarding the improvements needed are made in Chapter 6.

Social Services

Clare is fortunate in having a very highly developed Social Service Council where statutory and voluntary bodies have combined over the years in providing services for the elderly and the needy and for families, children and individuals who have difficulty in coping with living and household problems.

The churches and religious communities in the county have from the start (in 1969) played a prominent part in promoting the work of the Social Service Council but the various statutory bodies and officials are also closely

associated. Among these should should be mentioned Mr J. Boland, Co. Manager (who is one of the Trustees along with the Most Rev. Dr Harty, Bishop of Killaloe and Right Rev. Dr Owen, Bishop of Killaloe and Limerick). The staffs of the Co. Council and Health Boards are also very much involved as also are the chief psychiatrist and the staff of Our Lady's Hospital Ennis, the matron and staff of the other hospitals in the county, the Estate manager of Shannon Free Airport Development Company (SFADCO) the CEO of the Vocational Education Committee, to mention but a few.

According to the 1979 Annual Report of the Social Service Council, financial support comes by way of grants from the mid-western Health Board, Clare Co. Council, the Department of Justice, the National Social Service Council and the Department of the Environment. The total of such grants in 1978 was IR£36,000. Considerable financial support is also obtained from the public generally through Church gate collections, sales of work, raffles, etc., and private donations. The total of such contributions in 1978 was IR£33,000.

The staff of the Social Service Council consists of the Director, Fr Brian Geoghegan, and two secretarial assistants, six full-time and two part-time social workers, one counsellor for travelling people, and one for alcoholism, one full-time and two part-time home help organisers, one home maker, one nurse, one meals organiser and one voluntary organiser. An additional social worker has recently been appointed by the Council (at the expense of the ESB) to strengthen the Council's services in the impact area. In addition to the paid workers there are about 1,000 voluntary workers engaged in the provision of an extensive range of services throughout the county. The various programmes are co-ordinated through four area committees in mid, east, west and north Clare.

Some of the services provided which are likely to be of benefit to Moneypoint workers and their families are the following:

1 *Homemakers and Ladies Clubs:* There are now 14 such clubs in the county where members concentrate on the development of home making and family life. Seven are situated within the impact area, Ennis (2), Kilrush, Kilkee, Quilty, Miltown Malbay and Ennistymon.

2 *Community Pre-School Playgroups:* These are organised at 11 centres including both villages and towns. There is an education and training programme for children and parents involved in these groups. Within the impact area there are five centres, two in Ennis and one each in Kilrush, Kilkee and Ennistymon.

3 *Neighbourhood Groups:* This is a new development in which the inhabitants of a particular area evolve structures to help them cater for the general

well-being of their neighbourhood and its people. These groups should be of particular help to Moneypoint workers and their families in enabling them to become integrated into the district.

4 *Alcoholism Counselling Programme:* This programme, introduced from the US a few years ago, is aimed at helping people overcome serious alcohol problems. A skilled counsellor directs the programme therapy, while Alcoholics Anonymous gives valuable support.

5 *Home Making:* A qualified person assists families on a regular basis towards more effective budgeting, home management, cooking, etc.

6 *Voluntary Organiser:* This organiser helps people get involved either in voluntary organisations, existing services or new tasks.

The above descriptions of the activities of the Clare Social Service Council shows that there are considerable facilities available in the Moneypoint area and the Director informs us that further facilities can be made available for the Moneypoint workers and their families if required. But in case some programme may be lacking in its impact, the Steering Group (described in the introduction) at an early meeting discussed the possibility of a Monitoring Committee to consider any problems involving the project and people in the impact area (see recommendations in Chapter 7). Such a Committee, in co-operation with the Social Service Council, could be of real help in assuring timely action to catch potential problems. At the same time, local residents and social workers must not be too complacent. Many young married women will come into the area, and with their husbands working long hours on the site, some may feel lonely and bereft trying to cope all day with small children at home. The Ladies Clubs, Home Making Groups and other organisations will need to work very hard in order to make life in the area attractive for these women. If life becomes too difficult for them the young wives will leave the area for some more friendly environment and a good deal of spending power will go with them. It is up to the local people, therefore, to help the visitors in every way if they wish them to stay on.

Schools

The construction of the Moneypoint station will bring a substantial number of married couples into the area and their children will have to be catered for in the local schools. In Chapter 6 we estimate that the total inflow of families into the area (consisting of the families of married outside construction workers, of ESB site staff and of permanent station staff) will rise from around 100 in 1981 to approximately 280 by 1986 and decline to about 200 by 1989, remaining at this level if no more than three units are constructed.

Based on the survey of Moneypoint workers, described in Chapter 4 and data by age of children and head of household from the 1971 Census of Population, we estimate that the average number of school-going children per family of the additional workers over the period in question will be 2.0. This means that the system will have to absorb an extra 200 students at the present time, rising to almost 600 by 1986. This estimate probably understates the impact of Moneypoint on the educational system as many local people who would otherwise have left the area will now be employed in Moneypoint and the surrounding areas. It is impossible, however, to quantify these numbers.

Because of the age structure of the workers (see Chapter 4) the biggest impact in the early years of the project will be on the primary system. Data supplied by the Department of Education shows that there are currently 60 primary schools in the impact area with an enrolment of 7,010 pupils. The average pupil teacher ratio for the area is about 30. This is low by Irish standards and well within the Department's target of 35. The aggregate figures are, however, somewhat misleading as they conceal wide differences between different types of school. The area has a large number of small rural schools with very low pupil teacher ratios (often under 20) while in the larger schools of Ennis and Kilrush the ratios are much higher, over 35 for most schools.

The impact on the primary school system will depend largely, therefore, on where the workers are located and since we expect that the construction workers in any case will be spread fairly widely over the area (see Chapter 6) there should be few problems about the accommodation of their children. However, it is likely that most of the permanent station staff will locate in the Kilrush area and thus put further pressure on the already fairly crowded schools there. This, however, is not expected to become a serious problem as a major expansion to the Kilrush school is planned for the near future (involving an extra 6 classrooms) and costing up to IR£200,000.

The six vocational schools in the impact area have a total enrolment of 1,350 pupils. Most of the schools are small with only Ennis having more than 200 pupils. As 89 teachers are employed this leaves the aggregate pupil teacher ratio in vocational schools in the area at 15, again below the department's target. As with primary schools there may be extra pressure on the Kilrush schools and some extra accommodation costing about IR£250,000, at 1980 prices, will be required.

The area has eight secondary schools, three catering for boys, three for girls with two schools mixed. Three schools are located in Ennis, two in Kilrush and one each in Kilkee, Kildysart and Miltown Malbay. Total enrolment is 2,811, 178 teachers are employed giving an overall pupil teacher ratio of 16 (the Department's target is 19). This varies from a high of 20 in Kilkee convent to a low of 15 in Kilrush CBS and the Salesian Convent Ennis. Thus

from these figures there would appear to be little evidence of overcrowding in the Clare post primary system and the extra numbers anticipated should pose few problems. Indeed additional pupils may have a beneficial effect in allowing the continued existence of some small schools otherwise threatened by a fall in pupil numbers.

We can summarise the situation by saying there may be some small number of extra classrooms required here and there but we estimate that the total cost of building and equipment for all schools, at 1980 prices, should not exceed IR£1 million.

Water, Sewerage, Telephones and Electricity

A reservoir of six million gallons capacity on the power station site will store water obtained from Clare Co. Council for the boiler make up, fire fighting and domestic supply. A scheme for the supply of this water is being initiated. This will be a major extension of the West Clare regional water scheme which already supplies villages in the area and Kilrush. The total cost of the extension, at 1980 prices, is expected to be about IR£8.5 million. Of this amount IR£1.014 million, at 1980 prices, will be used to increase the capacity of the existing scheme and to improve existing mains. The remaining IR£7.486 million will go towards the provision of an additional 3–5 million gallons per day through a new Doo Lough east regional scheme. The ESB has agreed to bear four-sevenths of the capital cost of the latter scheme. Based on the original estimate this will amount to IR£4.28 million, at 1980 prices, to be paid in instalments as the design proceeds and the work is carried out.

The ESB is erecting its own sewage treatment plant on the site but there are some problems of disposal in the area west of Ennis. Treatment facilities at Kilrush are not considered adequate, while inland houses are served by septic tanks. Kilrush UDC, is trying to bring treatment facilities in the town to acceptable standards but is having difficulty due to objections by local residents to the site. It is expected, however, that planning permission for the new plant will be obtained shortly.

The telephone service in the area is similar to that in most other parts of the country. There is an automatic exchange in Ennis but Kilrush, Killimer, Kilmihil, Kilkee and Cooraclare do not have automatic exchanges. The telephone system throughout the country has been the subject of much debate recently and is due for a major overhaul over the next few years. The additional economic activity generated by Moneypoint makes it essential that improved service in West Clare be a high priority item in the national programme to upgrade the system.

The electricity supply in the area is adequate but the growth of household and farm equipment has overloaded many installations. Undervoltage on

some existing networks is a problem in Clare as (elsewhere) but a programme to counter such problems is in hand.

Present Industrial Firms in Area

As at 1 January 1980 there were about 2,200 males and 730 females employed in industry of all kinds in the impact area.

Table 3.8: *Industrial employment in the impact area as at 1 January 1980*

	Service Type		*Craft*		*Manufacturing*		*Total*	
Region	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*
Ennis and environs	236	40	16	7	1,419	539	1,671	586
Kilrush and district	48	6	–	–	303	78	351	84
Kildysart	–	–	–	–	34	7	34	7
Ennistymon	38	2	2	2	132	51	172	55
Total	322	48	18	9	1,888	675	2,228	732

Source: County development officer.

The regions in which they are employed and the type of industry involved are shown in Table 3.8. As might be expected the bulk of the industrial employment is located in Ennis with much smaller numbers in the Kilrush, Ennistymon areas and very few in Kildysart.

It has proved very difficult to get industry of any kind established in West Clare. Up to now there has been very little interest in the area by outside entrepreneurs and a number of those who located factories have closed down and moved elsewhere. It is understood, however, that interest in the region has sharpened somewhat since the Moneypoint project commenced and that 18,000 sq.ft. of available IDA factory space in Kilrush has been taken over recently by an industrial firm and another 16,000 sq. ft. is in process of being taken over.

Agricultural Production in Co. Clare

According to the most recent figures available from the Central Statistics Office there were about 11,400 land holdings of five acres and over in Clare in 1975. This number represents 4.6 per cent of the agricultural holdings in those size classes in the state. The proportion of holdings by size in Clare compared with Munster, other provinces and the state as a whole is shown in Table 3.9.

Table 3.9: *Percentage distribution by size of agricultural holding in Co. Clare in 1975 compared with the different provinces and the state*

Size group (acres)	*Clare*	*Munster*	*Leinster*	*Connacht*	*Ulster*	*State*
5–15	9.6	11.8	15.8	18.4	25.2	16.7
15–30	22.3	17.3	19.3	34.9	29.3	24.8
30–50	27.0	22.6	21.2	27.0	21.9	23.5
50–100	29.0	31.0	24.9	15.7	17.0	22.9
100 and over	12.2	17.2	18.9	3.9	6.6	12.1
Total	100.–	100.–	100.–	100.–	100.–	100.–

Source: Statistical Abstract of Ireland, 1976, Dublin: Central Statistics Office.

Clare is not a rich county agriculturally. Almost one-third of the land area is not suitable for agricultural production, while a fairly high proportion of the agricultural land is of rather poor quality, particularly in the west of the county. The main agricultural enterprises in Clare are cattle and dairying. The land is generally not very suitable for tillage and output of crops is therefore low. Indeed, about half the vegetables consumed in Clare are imported from outside counties. Figures for income arising in agriculture in Clare in 1979 were estimated[5] at IR£34 million or an average of IR£3,800 per wholetime agricultural worker. This was about equivalent to the national average in that year.

One of the problems with Clare agriculture is that little or no processing takes place in the county. Practically all the milk and livestock go outside for processing. Figures obtained from the Clare Co. Council show that only about 4,000 cattle, 13,000 sheep and 600 pigs were slaughtered by butchers in the county in 1979. However, it is estimated that there were about 2,000 pigs slaughtered on farms in that year.

The county is well served with agricultural and home management advisers, about 25 in all, and these include two horticultural advisers. Total expenditure by Clare Co. Committee of Agriculture on current account in 1980 has been budgeted at about IR£540,000, of which over IR£300,000 was to be spent on the salaries and travelling expenses of about 30 clerical and advisory staff.

[5]We wish to thank An Foras Talúntais, The Department of Agriculture, The Central Statistics Office and the Officers of Clare Co. Committee of Agriculture for supplying us with the data for these estimates.

Housing

A serious problem both in the construction and operating phase of the project will be the provision of housing and accommodation of all kinds. At the start of the project a partial survey of the Kilrush area indicated that accommodation adequate to cover needs to 1981 was available. At time of writing this report there is sufficient accommodation available for the current staff but as the numbers build up it is possible that suitable quarters will become scarce and special efforts will have to be made to provide living places. The ESB and the Co. Council do not consider work camps as desirable and hope that local enterprise will solve the problem. A more detailed survey, covering the entire impact area is now being undertaken by the Co. Development Team. On the basis of this information decisions will be made as to the best alternatives to adopt. For further details on the housing questions readers are referred to Chapter 6 (pp 85–90).

DEFINITION OF CERTAIN AREAS INCLUDED IN MONEYPOINT IMPACT AREA IN CLARE

Kilrush RD (Remainder): – Kilrush Rural District, other than Kilkee town.

Environs of Ennis: – Mainly Ennis Rural and Clareabbey District Electoral Divisions (DEDs).

Ennis RD (Remainder): – Parts of Ennis Rural and Clareabbey DEDs not included in Environs of Ennis. DEDs of Doora, Furror, Kilcloher, Killanniv, Killone, Kilnamona, Kilraghtis, Spancelhill, Dysert, Templemaley and Kinturk.

Ennistymon RD (Part of): – DEDs of Milltown Malbay, Annagh, Cloonanaha, Formoyle, Ballyea.

Chapter 4

ECONOMIC IMPACT OF MONEYPOINT PROJECT

Direct Effects

The direct effects of the project on incomes within the impact area come from three sources. The first is made up of wage payments by ESB and by its contractors during both the construction and operating phases. Some of these payments will go to local people, while others will go to mobile construction labour temporarily employed on the project in sequence as construction proceeds. The second consists of purchases of goods and services by ESB and contractors from local suppliers and the third of extra expenditure by the Co. Council on infrastructure connected with the project (paid for by the ESB and from central funds).

The most important economic impact will come from wage payments by ESB and its contractors. To estimate these, we required, first, data on the size and composition of the workforce year by year. These were provided by the ESB (see Tables 2.1 and 2.2). We then undertook two surveys of the workers to determine their estimated take-home pay, how much they would spend in Clare, and on what groups of commodities and services. Information was also obtained on a number of other important matters relating to workers' preferences as to housing, location, shopping areas, training and experience and future work plans (see questionnaire at the end of this Report). Data from the surveys form the basis for the estimates of direct economic impact in the tables and discussion that follow.

These estimates must be interpreted with caution for several reasons. First, they are based on a sample and are therefore subject to a certain margin of sampling error. The magnitude of these possible errors is small, however, since almost half of the 265 workers on the site at the time were surveyed. Readers should, however, bear in mind that estimates in respect of sub-groups of workers may be less reliable than those for the whole population of workers.

The second reservation is more significant. This study was undertaken and completed at a very early stage. Only a few of the many types of construction workers who will be employed in sequence at Moneypoint were available at the time of the surveys in 1980. Our projections for later years, therefore, rest on the assumption that survey responses by various groups of workers would be essentially the same. It is unlikely that this assumption will be fulfilled exactly, hence the data presented below are intended to suggest overall trends and give an idea of orders of magnitude rather than precise predictions of future events.

Finally, there are rather pronounced differences in spending patterns between local workers and those coming to Clare from other parts of the country. If our estimates of the proportion of local to outside workers prove incorrect both the level and composition of additional spending within the impact area will be affected.

Survey of Workers at Moneypoint

Two groups of workers were interviewed, one group of 91 in May 1980 and a further group of 32 (who were not there at the time of the first interview) in August. The two groups have, however, been combined and the results given here relate to the total 123 respondents. Most of the workers were employed by two contractors – JMJ, the firm responsible for site development, and Ascon which had responsibility for the foundations. Some of the ESB construction staff were also interviewed. The interviewing was carried out by a team especially recruited and trained for the study. Interviews were carried out in the respondents' homes except in the case of ESB staff who were interviewed on the site.

Lists of the names and local addresses of the workers employed by each contractor were obtained from the site Labour Relations Officer. About 200 were employed on the site at the time of the first survey and it was decided to aim for an achieved sample of about half of these. A stratified random sample of 127 workers was selected, the stratification factor being employer and origin of the worker. From this sample 91 usable returns were obtained from the sample selected. Some of the workers proved impossible to find at home and in some other cases landladies refused permission for workers to be contacted in their lodgings. In the second survey similar conditions obtained. It proved more difficult to contact the workers on this occasion. However, a further 32 completed returns were obtained from 65 additional workers on the site.

The total number of workers on the site and in the achieved sample, classified by employer and origin, are shown in Table 4.1.

The total number on the site during the period of the two surveys was 265 out of which 123 or 46.4 per cent were interviewed. The workers were classified as to whether they were from the local area or elsewhere. A local was defined as a person who had lived in the impact area immediately prior to starting work at Moneypoint. A person who had not been resident in the impact area prior to the job at Moneypoint, even though a native of Clare, was classed as being from elsewhere. Table 4.1 shows that of the total workers on the site during the interviews, 118 were local and 147 were from outside the area. Sixty-one locals and 62 outsiders were interviewed.

Table 4.1: *All construction workers on site and number interviewed, classified by employer and origin of worker*

Employer	*Origin of worker*	*Number on site*	*Number interviewed*	*Sample as percentage of total*	*Grossing factor*
ESB	Local	2	2	70.8	1.41
	Elsewhere	22	15		
Other	Local	116	59	50.8	1.97
	Elsewhere	125	47	37.6	2.66
All	Local	118	61	51.6	–
Employees	Elsewhere	147	62	42.2	–
	Total	265	123	46.4	

The proportions from the different groups included in the sample varied quite substantially. For example, outsiders constituted about 90 per cent of the ESB employees compared with 44 per cent of the other workers. Thus to obtain a true picture for the site as a whole the sample results were re-weighted using the grossing factors shown in the last column of Table 4.1. All the averages, totals and percentages given in the Report include this re-weighting. We were concerned that our estimates should not include non-response bias which would occur if the workers interviewed differed systematically in terms of incomes, attitudes, etc., from those we failed to locate. We believe that the re-weighting which was carried out on the basis of employer and origin would remove most of any such bias. In deriving the income estimates we took the further precaution of post-stratifying by occupation. Thus it seems unlikely that non-response bias is a major problem in the data.

Age and Origin of Workers

Table 4.2 shows the age and origin of the workers on the site. As might be expected, building work of the kind going on at Moneypoint is likely to attract young workers. This is borne out in the table where the average age is shown to be low, especially among the workers from the local area. About 64 per cent of the latter were under 30 years of age and almost 50 per cent were under 25 years. Of the outside workers, 45 per cent were under 30 years but only 19 per cent were under 25 years. The overall average was about one-third under 25 years of age and a further one-fifth between 26 and 30 years. Only about one-tenth of both groups were over 45 years of age.

Table 4.2: *Percentage distribution of workers, classified by age and origin of worker*

Age group	*Local area*	*Elsewhere*	*All workers*
		Per cent	
25 and under	49.2	19.0	32.6
26–30	14.3	26.3	20.9
31–35	10.7	18.9	15.2
36–45	15.4	24.7	20.5
Over 45	10.3	11.2	10.8
All ages	100.0	100.0	100.0

Despite their low average age, Table 4.3 shows that just about half the local workers and a somewhat higher proportion of the outsiders were married. As might be expected all the spouses of the married people from the local area live there. Of the married workers from outside the area an estimated 43 per cent have their spouses living with them in Clare. The latter, however, include married ESB site staff and if these are omitted the proportion of married site workers from outside the area having their spouses in Clare is reduced to 40 per cent. Thus of the whole workforce 64 per cent are either unmarried or have their spouses living outside of Clare.

Of the married workers with spouses outside the Moneypoint area, about 35 per cent visit their families most week-ends, while the remainder visit them

Table 4.3: *Percentage distribution of workers, classified by marital status (including location of spouse), employer and origin of worker*

	ESB		*Other employer*		*All employers*		
Marital status	*Locals*	*Outsiders*	*Locals*	*Outsiders*	*Locals*	*Outsiders*	*Total*
				Per cent			
1 Married – spouse present	50.0	40.0	50.2	21.1	50.2	23.9	35.7
2 Married – spouse absent	–	26.7	–	32.0	–	31.2	17.2
3 Widowed/Single	50.0	33.3	49.8	46.7	49.8	44.8	47.0
4 Total (2) + (3)	50.0	60.0	49.8	78.7	49.8	76.1	64.2
5 Total (1) + (4)	100.0	100.0	100.0	100.0	100.0	100.0	100.0
6 (1) as percentage of (1) + (2)	100.0	60.0	100.0	39.8	100.0	43.3	67.5

less frequently. All the spouses in question lived between 100 and 125 miles from Moneypoint (see Table 4.4) and visits were made more frequently to those living nearer to the site.

Table 4.5 shows that of the total workers about 44 per cent had no dependants, while 15 per cent had five or more. The average number of dependants per worker was 2.08 of which 1.35 were children and the remainder spouses or other dependant relatives. There was little difference in the number of children per married worker as between the local married workers and the outside workers whose spouses were not in Clare – 2.4 as against 2.5 respectively. Married workers from elsewhere whose spouses were with them in Clare had an average of 2.0 children each (see Table 4.6).

Table 4.7 shows the highest educational level reached by the respondents and the type of job they held immediately prior to their current one. Overall, about 28 per cent left school at primary level, 30 per cent attended vocational school, 30 per cent went to secondary school, while some 12 per cent received third-level education. There was a sharp contrast between local workers and those from outside the area in the proportion that had received third-level education. About 19 per cent of outsiders had received some third-level education compared with only 3 per cent of locals.

The information shown in Table 4.7 on respondents' last job emphasises the extent to which those coming into the Moneypoint area are a mobile workforce specialising in building work. Eighty-two per cent of the outsiders had a last job similar to the present one while only 37 per cent of the locals had last jobs similar to their current ones. The other local workers had been in skilled jobs different from the present one (22 per cent) and in semi-skilled

Table 4.4: *Frequency of visits to spouses not resident in the Moneypoint area, classified by distance of spouse's residence from Moneypoint*

	Distance of spouse's residence from Moneypoint (miles)		
Frequency of visits to spouse	*100–199*	*200 and over*	*All distances*
		Per cent	
Most week-ends	46.5	20.3	34.8
Every second week-end	21.4	0.0	13.0
Every month	32.1	40.5	34.8
Less frequently	0.0	39.2	17.4
Total	100.0	100.0	100.0

Table 4.5: *Origin of workers classified by number of dependants*

Number of children	*Local*	*Elsewhere*	*All workers*
		Per cent	
None	53.1	49.4	51.1
1–2	19.8	23.8	22.0
3–4	15.2	16.8	16.1
5 and over	11.9	10.1	10.9
Total	100.0	100.0	100.0
Average	1.42	1.30	1.35
Other dependants			
None	46.5	42.9	44.5
1–2	48.3	55.4	52.2
3–4	1.7	1.7	1.7
5 and over	3.5	0.0	1.6
Total	100.0	100.0	100.0
Average	0.79	0.68	0.73
All dependants			
None	43.5	44.8	44.2
1–2	17.5	14.8	16.0
3–4	23.6	25.7	24.8
5 and over	15.4	14.7	15.0
Total	100.0	100.0	100.0
Average	2.21	1.98	2.08

and unskilled jobs different from the present one (21 per cent). A surprisingly small number of the locals had their last job in farming (5 per cent) while about 6 per cent had Moneypoint as their first job on leaving school. Only about 5 per cent of the local workers and none of the outsiders reported having been unemployed before coming to work in Moneypoint.

Table 4.8 shows that about one-third of the local workers are in unskilled jobs compared with 7 per cent of the outsiders. Also, as might be expected, practically all of the professional/managerial staff come from outside the Moneypoint area. The proportion of locals on the clerical staff is about equal to that of those coming from outside the area. The proportions in skilled and semi-skilled positions are not very much different for both groups.

Table 4.9 shows that 72 per cent of the local workers had been with their present employer for less than one year, while 27 per cent had been with this

Table 4.6: *Origin and marital status of workers, classified by types of dependant*

	Local		*Elsewhere*			*All workers*		
Type of dependant	*Married*	*Single/ Widowed*	*Single/ Widowed*	*Spouse in Clare*	*Spouse elsewhere*	*Single/ widowed*	*Married – Spouse present*	*Married – Spouse absent*
				Per cent				
Children								
None	12.5	94.0	100.0	8.7	5.6	97.1	11.1	5.6
1–2	33.5	6.0	0.0	50.0	39.3	2.9	39.3	39.3
3–4	30.3	0.0	0.0	29.0	32.2	0.0	29.9	32.2
5 and over	23.7	0.0	0.0	12.3	22.9	0.0	19.7	22.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Average number per worker	2.4	0.1	0.0	2.0	2.5	0.0	2.3	2.5
Other Dependants								
None	0.0	93.3	95.7	0.0	0.0	94.6	0.0	0.0
1–2	89.6	6.7	4.3	92.7	100.0	5.4	90.8	100.0
3–4	3.5	0.0	0.0	7.3	0.0	0.0	4.9	0.0
5 and over	6.9	0.0	0.0	0.0	0.0	0.0	4.4	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Average number per Worker	1.3	0.1	0.4	1.1	1.0	0.1	1.3	1.0
All Dependants								
None	0.0	87.3	95.7	8.0	0.0	91.7	3.0	0.0
1–2	22.3	12.7	4.3	30.6	17.8	8.3	25.4	17.8
3–4	47.1	0.0	0.0	42.0	50.0	0.0	45.2	50.0
5 and over	30.6	0.0	0.0	19.4	32.1	0.0	26.4	32.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Average number per worker	3.7	0.1	0.4	3.1	3.5	0.1	4.0	3.5

Table 4.7: *Highest educational level reached by respondents and details of previous jobs, classified by origin of worker*

	Local Area	*Elsewhere*	*All workers*
Highest educational level reached		*Per cent*	
Primary	27.1	29.3	28.3
Vocational	39.3	22.2	29.8
Secondary	31.2	29.3	30.2
Third Level	2.5	19.2	11.7
Total	100.0	100.0	100.0
Last job held			
None – unemployed	4.9	0.0	2.2
None – at school	6.1	3.5	4.7
Work on own farm	1.7	0.0	0.8
Work on family farm	3.3	1.9	2.6
Job similar to present one	36.5	81.5	61.3
Job different from this			
Clerical	4.2	0.0	1.9
Skilled	22.0	7.5	14.0
Semi-skilled/unskilled	21.1	5.6	12.6
Total	100.0	100.0	100.0

Table 4.8: *Origin of workers, classified by occupation*

Occupation	*Local*	*Elsewhere*	*All workers*
		Per cent	
Professional/Managerial	2.9	20.1	12.4
Clerical	4.5	5.4	5.0
Supervisory	3.0	16.0	10.2
Skilled	37.1	32.6	34.7
Semi-skilled	19.1	18.5	18.8
Unskilled	33.3	7.3	19.0
Total	100.0	100.0	100.0

Table 4.9: *Length of time working for present employer, classified by origin of worker and occupation*

	Under 1 year	*1–5 years*	*6–10 years*	*11 years and over*	*Total*
Origin of worker			*Per cent*		
Local	71.8	27.0	1.2	0.0	100.0
Elsewhere	40.8	37.7	8.1	13.3	100.0
Occupation					
Professional/Managerial	14.8	47.4	16.3	21.4	100.0
Clerical	15.5	52.7	21.2	10.6	100.0
Supervisory	43.2	25.5	0.0	31.3	100.0
Skilled	69.0	25.4	2.8	2.8	100.0
Semi-skilled	49.3	45.6	5.1	0.0	100.0
Unskilled	76.6	23.4	0.0	0.0	100.0
Total	54.7	32.9	5.0	7.3	100.0

employer for 1–5 years. Of the outside workers 21 per cent were with their present employer six years or over, 38 per cent for 1–5 years and 41 per cent for less than one year. Looking at the occupations of the workers we see that 77 per cent of the unskilled workers and almost 50 per cent of the semi-skilled workers had been less than one year with their present employer. Those with services of 6 years and over tended to be mainly in the professional, clerical and supervisory grades.

The usual working hours for the site workers are given in Table 4.10. As expected, many workers work very long hours. Over 90 per cent work for 50 hours per week or longer with over 40 per cent working for more than 60 hours. Only 2 per cent of the total workforce put in a 30–39 hour week, and these are mainly some clerical staff. Most clerical staff also work long hours. The outside workers tend to work longer hours than the locals.

Table 4.11 shows the length of time the present labour force expects to stay working in Moneypoint classified by occupation. Some 23 per cent of the professional/managerial group expect to stay on for more than 10 years as compared with 47 per cent of this group who expect to remain for less than one year. About 46 per cent of both the clerical and supervisory groups expect to stay on for more than 10 years, while 38 and 21 per cent respectively of these groups expect to leave Moneypoint within one year. Surprisingly, almost 90 per cent of the unskilled workers expect to stay on for more than 10 years or "for as long as the job lasts".

Table 4.10: *Usual working hours, classified by origin of worker and occupation*

	Usual working hours					
	30–39	*40–49*	*50–59*	*60–69*	*70 and over*	*Total*
Origin of worker			*Per cent*			
Local	2.4	2.9	60.7	19.3	14.7	100.0
Elsewhere	1.9	8.7	42.2	25.5	21.6	100.0
Present occupation						
Professional/Managerial	4.3	34.3	47.4	7.8	6.3	100.0
Clerical	31.8	0.0	49.0	19.2	0.0	100.0
Supervisory	0.0	5.2	56.8	18.1	19.9	100.0
Skilled	0.0	2.1	43.3	20.4	34.2	100.0
Semi-skilled	0.0	3.0	47.5	37.7	11.8	100.0
Unskilled	0.0	0.0	65.8	25.3	8.9	100.0
All workers	2.1	6.1	50.5	22.7	18.5	100.0

Table 4.11: *How long respondent expects to stay working at Moneypoint, classified by occupation*

	Length of Expected Stay				
Present occupation	*Less than 1 year*	*1–5 years*	*6–10 years*	*More than 10 years†*	*Total*
			Per cent		
Professional/Managerial	46.6	17.2	12.9	23.4	100.0
Clerical	38.4	0.0	15.5	46.1	100.0
Supervisory	21.0	22.0	11.1	46.0	100.0
Skilled	20.3	0.0	12.3	67.4	100.0
Semi-skilled	20.4	3.2	7.6	68.8	100.0
Unskilled	0.0	10.4	0.0	89.6	100.0
All workers	21.0	7.0	9.2	62.7	100.0

†Includes those who replied "for as long as possible" or "as long as job lasts".

Table 4.12 shows the regions and type of work to which the workers expect to go when work on the Moneypoint site finishes. Some 74 per cent of the locals and 16 per cent of the outsiders expect to stay on in Clare. About 19 per cent of the locals and 70 per cent of the outsiders expect to stay in Ireland but outside Clare. Just over 7 per cent of the locals and 14 per cent of the outsiders

Table 4.12: *Region and job to which respondents expect to go when job at Moneypoint finishes, classified by origin of worker and marital status*

	Local		*Elsewhere*		*All workers*		
	Married	*Single/ Widowed/ Separated*	*Married*	*Single/ Widowed/ Separated*	*Local*	*Elsewhere*	*Total*
Region to which respondent expects to go				*Per cent*			
Stay in Clare	81.9	64.4	9.8	24.5	74.1	16.0	42.1
Stay elsewhere in Ireland	14.9	23.5	76.9	60.1	18.7	69.7	46.8
Emigrate	3.2	12.1	13.3	15.5	7.2	14.2	11.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Type of work to which respondent expects to go to							
Site work	71.4	64.4	86.4	95.7	68.2	90.6	80.6
Industrial Employment	6.2	12.5	3.5	4.3	9.1	3.9	6.2
Job as farm worker	0.0	3.5	0.0	0.0	1.6	0.0	0.7
Work on own farm	6.2	3.5	0.0	0.0	4.9	0.0	2.2
Work in own business	6.5	3.7	3.2	0.0	5.2	1.7	3.3
Home duties	3.2	2.7	0.0	0.0	3.0	0.0	1.3
Other	3.2	6.9	6.9	0.0	4.9	3.8	4.3
Don't know	3.2	2.7	0.0	0.0	3.0	0.0	1.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

expect to emigrate. The latter figure is probably inflated by the fact that one of the contractors is based in Northern Ireland and many of his employees expect to return there or to England.

The second part of Table 4.12 shows that a surprisingly high proportion of the local workers expect to remain in site work when the job at Moneypoint finishes. Only 9 per cent expect to move into industrial employment and about 7 per cent into farm work. Given that over 70 per cent of the locals expect to remain in Clare the question must arise as to whether there will be sufficient building jobs in the county to accommodate them. Of course we have no evidence that they would not be willing to move into industrial employment if this were available.

Current Residence

Table 4.13 shows the location of the workers' residences classified by district and distance from the Moneypoint site. As might be expected, workers

Table 4.13: *Districts in which workers are living, distance from the site and usual means of transport to the site, classified by origin and marital status*

	Local		*Elsewhere*			*All workers*		
	Married	*Single/ widowed separated*	*Single widowed/ separated*	*Married – spouse present*	*Married – spouse absent*	*Married*	*Single/ widowed/ separated*	*Total*
					Per cent			
District in which resident								
Kilrush	43.6	50.1	49.4	37.9	82.0	54.3	49.8	52.4
Kilkee	13.3	6.7	24.2	14.6	6.2	11.4	15.9	13.5
Cooraclare/Kilmihill	10.1	22.5	12.1	8.0	5.6	8.6	17.0	12.3
Knock/Labasheeda	3.2	10.2	7.8	0.0	0.0	1.4	8.9	4.9
Ennis/Shannon	12.5	3.5	2.2	31.5	6.2	15.0	2.8	9.3
Milltown Malbay	10.4	7.0	4.3	0.0	0.0	4.3	5.6	4.9
Other	6.9†	0.0	0.0	8.0	0.0	5.0	0.0	2.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Distance from site (miles)								
1–2	–	11.5	–	–	–	–	5.5	2.6
3–5	33.3	28.4	45.5	37.9	70.3	46.5	37.4	42.2
6–10	17.0	13.7	3.9	8.0	11.7	13.1	8.5	10.9
11–15	20.0	25.7	44.1	14.6	11.8	15.9	35.4	25.1
16–20	10.4	13.7	4.3	–	–	4.4	8.7	6.4
21–30	6.9	7.0	–	20.1	6.2	10.0	3.3	6.8
Over 30	12.5	–	2.2	19.4	–	10.1	1.1	5.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Means of transport								
Own car	69.7	65.3	79.4	92.7	70.4	75.7	72.7	74.3
Lift	30.3	28.9	16.7	7.3	24.0	22.5	22.5	22.5
Employers' transport	–	2.5	3.9	0.0	5.6	1.8	3.3	2.5
Walk	–	3.2	–	–	–	–	1.5	0.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

†These were mainly north Kerry residents who came to work on the car ferry. They are classed here as local since they return to their own homes each evening.

from the local area are more widely scattered than are those from outside the area. The latter show a preference for living in the larger centres with very high proportions resident in Kilrush, Kilkee and Ennis. Around 55 per cent of the workers travel 10 miles or less to work, while about 13 per cent travel between 16 and 30 miles and 6 per cent more than 30 miles. About three-quarters of all workers come to work by own car and a further fifth get a lift.

The type of residence in which the workers live is shown in Table 4.14. About 78 per cent live in houses, 11 per cent live in rented flats, 9 per cent in lodgings with only 3 per cent in caravans. All of the local single workers and over 90 per cent of the local married workers live in houses, the former living mainly with relatives. Surprisingly almost 80 per cent of the single or widowed outside workers also live in houses. Over 60 per cent of the total workers were very satisfied with their accommodation, while a further 31 per cent were fairly satisfied. Only about 7 per cent were dissatisfied. The location of the houses and other accommodation is given in Table 4.15 which shows that the flats, rooms and lodgings are mainly in Kilrush, Kilkee and Ennis. In all the other areas the accommodation is mainly houses, either own, relatives or rented.

The districts in Clare in which the workers and their families usually do their shopping are given in Table 4.16. Fifty-six per cent of all the workers do their shopping in Kilrush, 14 per cent in Ennis/Shannon and 13 per cent in Kilkee. Expenditure by the local workers is somewhat more widely distributed than that of the outsiders because these workers' residences are more widely scattered.

The facilities in the Moneypoint area for sports and pastimes are shown in Table 4.17 together with the percentage of those who take part in such facilities. Most of the workers take part in dancing, cinema, Gaelic football, traditional music and concerts. Very few of the locals take part in golf but some 35 per cent of the outsiders play the game.

Table 4.18 analyses the preferences of respondents who do not now own a dwelling in the Moneypoint area as to what districts in which they would like to live. Reference to the questionnaire will show that respondents were asked two questions on this topic (a) whether or not they would like to live in each of a specified set of districts and (b) which one they would most like to live in. Among locals, Kilrush is the most popular area with 31 per cent saying it was the district in which they would most like to live. Workers from elsewhere opted in greater numbers for Ennis than for any other location. Kilkee was also popular with outsiders; 24 per cent said they would most like to live there.

Table 4.14: *Type of residence occupied by workers, classified by origin of workers, occupation and attitude towards residence*

	House						
	Rented	*Parents/ relatives*	*Own*	*Caravan*	*Rented flat*	*Lodgings*	*All residences*
Local workers				*Per cent*			
Married	37.0	6.7	49.7	–	6.7	–	100.0
Single/widowed/separated	6.7	84.0	9.2	–	–	–	100.0
Outsiders							
Married – spouse in Clare	57.2	–	20.2	–	14.6	8.0	100.0
Married – spouse elsewhere	23.0	–	3.1	12.3	31.1	30.6	100.0
Single/widowed	66.5	8.2	4.3	3.9	8.6	8.6	100.0
Occupation							
Professional/Managerial	55.1	–	32.0	–	12.9	–	100.0
Clerical	38.4	40.4	10.6	–	10.6	–	100.0
Supervisory	60.7	–	13.2	20.8	5.2	–	100.0
Skilled	38.0	15.9	17.5	–	13.4	15.2	100.0
Semi-skilled	24.4	27.3	17.8	5.1	14.1	11.3	100.0
Unskilled	26.7	50.6	12.0	–	5.1	5.6	100.0
All workers	37.8	22.3	17.5	3.1	10.9	8.5	100.0
Attitude to residence							
Very satisfied	59.7	90.1	63.6	–	39.4	50.0	62.4
Fairly satisfied	29.4	10.0	36.4	100.0	40.2	50.0	30.8
Fairly dissatisfied	5.4	–	–	–	4.9	–	2.7
Very dissatisfied	5.6	–	–	–	15.4	–	4.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 4.15: *Type of residence classified by location and origin of workers*

Type of residence	*Kilrush*	*Kilkee*	*Knock*	*Cooraclare*	*Milltown Malbay*	*Ennis/ Shannon*	*North Kerry*	*All residences*
					Per cent			
Local workers								
Own house	35.2	17.3	24.0	20.5	–	58.2	50.0	29.6
Parents/relatives house	43.2	33.3	51.9	68.8	60.0	21.7	–	45.2
Rented house	14.5	49.4	24.0	10.6	40.0	20.1	50.0	21.9
Rented flat/room	7.1	–	–	–	–	–	–	3.3
All Residences	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Outside workers								
Own/relatives house	3.1	–	–	21.1	–	55.5	–	11.4
Rented house	44.8	65.5	50.0	78.9	–	35.2	100.0	50.7
Caravan	6.7	–	50.0	–	–	–	–	5.6
Rented flat/room	18.4	34.5	–	–	–	9.3	–	17.1
Lodgings	26.9	–	–	–	–	–	–	15.3
All residences	100.0	100.0	100.0	100.0	–	100.0	100.0	100.0
All workers								
Own house	14.1	5.8	14.6	20.8	–	56.5	29.8	17.5
Parents/relatives house	19.2	11.1	31.6	40.8	60.0	8.3	–	22.3
Rented house	32.7	60.1	34.2	38.4	40.0	29.4	70.2	37.8
Caravan	4.0	–	19.6	–	–	–	–	3.1
Rented flat/room	13.9	23.0	–	–	–	5.7	–	10.9
Lodgings	16.1	–	–	–	–	–	–	8.5
All residences	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 4.16: *District in Clare in which workers or families usually shop, classified by origin of worker and marital status*

	Local		*Elsewhere*			
Districts in which shopping is mainly done	*Single/ widowed/ separated*	*Married*	*Single/ widowed/ separated*	*Married – spouse absent*	*Married – spouse present*	*All workers*
			Per cent			
Kilrush	64.8	41.6	53.2	79.0	41.2	56.3
Cooraclare	10.6	13.8	12.6	5.6	–	9.6
Ennis/Shannon	3.6	16.5	11.2	9.3	42.9	14.3
Kilkee	6.9	17.4	23.1	–	15.9	13.2
Knock	6.9	–	–	6.1	–	2.7
Milltown Malbay	7.2	10.8	–	–	–	4.0
All Districts	100.0	100.0	100.0	100.0	100.0	100.0

Table 4.17: *Facilities in Moneypoint area for sports and pastimes and percentage of workers who take part*

	Are Facilities Available?			*Percentage Who Take Part, and Origin of Worker*					
				Locals		*Elsewhere*		*Total*	
Facility	*Yes*	*No*	*Don't know*	*Yes*	*No*	*Yes*	*No*	*Yes*	*No*
				Per cent					
Dancing	65.9	19.5	14.7	66.2	33.8	65.6	34.4	65.9	34.1
Drama	28.2	42.3	29.5	17.3	82.7	20.3	79.7	18.6	81.4
Cinema	67.7	20.6	11.7	61.8	38.2	48.5	51.5	54.1	45.9
Concerts	45.5	39.6	14.9	38.2	61.8	57.4	42.6	45.5	54.5
Rugby	50.7	26.2	23.1	12.1	87.9	8.1	91.9	10.1	89.9
Gaelic football	78.6	7.2	14.2	60.2	39.8	24.0	76.0	42.5	57.5
Soccer	50.9	24.8	24.3	24.1	75.9	24.2	75.8	24.1	75.9
Handball/squash	47.6	29.5	22.9	15.3	84.7	42.0	58.0	28.6	71.4
Golf	64.6	17.1	18.3	2.2	97.8	34.6	65.4	18.0	82.0
Tennis	25.3	46.3	28.4	10.0	90.0	26.7	73.3	17.2	82.8
Badmington	50.4	22.3	27.4	13.8	86.2	10.6	89.4	12.5	87.5
Traditional music	82.6	4.5	12.9	55.7	44.3	66.8	33.2	61.4	38.6
Other	–	–	–	–	–	–	–	–	–

Table 4.18: *Preferences for various districts by respondents who do not now own a dwelling in the local area by origin of worker*

Origin of worker	*Kilrush*	*Cooraclare*	*Ennis/ Shannon*	*Kilkee*	*Knock*	*Milltown Malbay*	*Lissycasey*	*Querrin*
				Per cent				
Local area workers								
Would like to live there	29.4	38.2	32.9	37.5	27.1	18.7	17.7	12.2
Would dislike living there	57.7	51.3	54.8	47.8	55.5	62.0	70.8	76.3
Indifferent	12.8	10.5	12.3	14.7	17.4	19.3	11.6	11.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Workers from elsewhere								
Would like to live there	15.0	24.2	42.0	54.9	19.7	8.4	16.6	14.6
Would dislike living there	29.1	35.2	19.6	19.9	31.6	38.0	23.1	24.6
Indifferent	55.9	40.5	38.5	25.1	48.7	53.7	60.3	60.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Percentage who would most like to live in this district								
Locals	31.2	20.4	8.2	20.4	10.5	5.3	2.0	2.0
Outsiders	9.5	14.7	40.6	23.8	9.1	*	*	*

*Less than 1 per cent.

Income and Expenditure

An important objective of the survey was to provide detailed information on the level and pattern of expenditure (both in Clare and elsewhere), by the workers at Moneypoint. This was approached in two different ways: (a) workers were asked what was their average take-home pay from Moneypoint and what proportion of this they usually saved, spent in Clare and spent outside Clare; (b) a detailed breakdown of expenditure in Clare in the past seven days was obtained.

The collection of data on incomes by means of a survey presents a number of difficulties. Respondents may be reluctant to divulge their earnings which they regard as a private matter. Furthermore, even those who are willing to co-operate may incorrectly state the amounts involved or be confused as to the definitions of income in the study or the period to which the data should refer. In the present study, we decided to ask the respondents for their "average earnings"and instructed the interviewers to interpret this as the worker's earnings in a typical week. Non-response on income was not a serious problem since only one per cent of workers refused to divulge their income. Inquiries from the ESB and the contractors suggested that average hours worked per worker would not vary substantially throughout the duration of construction, since work proceeds under lights in winter. Thus, we felt justified in grossing the income data up to annual averages from the weekly averages supplied by the workers. Of course, we might re-emphasise here a point made in the introduction, viz., that our estimates are designed to indicate orders of magnitude rather than make precise predictions. We might add that, as a further check, the averages obtained in the survey were discussed with the ESB who found them plausible.

Table 4.19 shows the average take-home pay reported by the workers in the survey, classified by occupation, origin and whether their spouse lived in the Moneypoint area or not. The overall average take-home pay was about IR£119 per week and the estimated total take-home pay for all workers on the site in a week was about IR£31,700. As would be expected, average pay is highest in the skilled and supervisory manual group and lowest in the semi-skilled and unskilled occupations. Given their predominance in the skilled occupations, it is not surprising to find that workers from outside the local area had higher take-home pay than locals (IR£130 per week against IR£107 per week). The average take-home pay for workers whose spouse was living outside the local area was high – IR£145 per week.

Table 4.20 shows the breakdown of expenditure as between expenditure in Clare and outside the county. As might be expected, workers from outside the Moneypoint area spent a good deal more outside the area than did the locals (an average of 30 per cent of pay as compared with 8 per cent for locals).

Table 4.19: *Average and total take-home pay per week as reported in the survey, classified by occupation, origin and whether respondent has a spouse outside the Moneypoint area*

	Number of workers	*Average take-home pay per worker*	*Total take-home pay*
Occupation		IR£	IR£
Administrative/clerical	46	119.04	5,476
Manual skilled and supervisory	119	130.57	15,538
Manual semi-skilled and unskilled	100	106.83	10,683
Origin			
Local area	119	107.26	12,764
Elsewhere	146	129.67	18,932
Location of spouse			
Local area or no spouse	219	114.36	25,045
Elsewhere	46	144.60	6,652
All workers	265	119.28	31,697

Table 4.20: *Average percentage of take-home pay spent in different locations, classified by origin of worker*

	Origin of worker		
Where income spent	*Local*	*Elsewhere*	*All workers*
		Per cent	
Spent in Clare	64.9	49.0	55.5
Spent outside Clare	8.1	29.8	21.0
Saved	27.0	21.1	23.5
Total	100.0	100.0	100.0

Some respondents reported saving some of their take-home pay. In the second phase of the study we asked workers to state where and when they intended to spend their savings. From the responses to these questions it was estimated that about two-thirds of outside workers' savings would be spent outside Clare, whereas almost all the savings of locals would be spent locally. Hence, it is estimated that about 71 per cent of total take-home pay will ultimately be spent in Clare.

Table 4.21 uses the data from Tables 4.19 and 4.20, together with the ESBs labour force projections, to estimate weekly and annual take-home pay in the years 1980–1989 and to break this down as between expenditure in Clare, and expenditure elsewhere. Total annual take-home pay of the site workers in 1980 money value is estimated as IR£1.6 million in 1980, rising to IR£5.9 million in 1984 and falling then to IR£247,000 in 1989.[6] This does not include the salaries of the permanent operating staff, who will be resident in the area when the site is finished. The take-home pay of these is estimated to rise from IR£880,000 in 1984 to about IR£1.9 million in 1988 and remain at this level in subsequent years (all at 1980 prices). Expenditure in Clare by site workers is estimated to be about IR£1.1 million in 1980. This will rise to IR£4.2 million by 1984 and fall to IR£176,000 by 1989. These estimates are based on the assumption that the earning and spending patterns of the workers remain the same over the years. If, for instance, the ratio of locals to outsiders were to change, the distribution of expenditures as between the "within Clare" and "outside Clare" categories would be affected. Expenditure by permanent station staff in Clare (at 1980 prices) is estimated to rise from IR£809,000 in 1984 to about IR£1.8 million in 1987 and remain at this level in subsequent years. These latter estimates are based on the assumption that permanent station staff spend the same proportion of their income locally as do local site staff.

The question on expenditure mentioned above, together with the site labour force projections, were used to compile Table 4.22 which shows estimates of expenditure on various commodities for the years 1980–1989. Total expenditure is expected to rise in line with total take-home pay.

Total expenditure of both site workers and permanent ESB operating staff in Clare is estimated at about IR£1.1 million in 1980 rising to IR£5.4 million in 1985 and declining to about IR£1.9 million in 1989. Of the total expenditure throughout the duration of the construction phase about 25 per cent is on food, 10–12 per cent each on drink/tobacco, and clothes, 8 per cent on

[6]The reader is reminded that these estimates are based on the assumption that three units will be built on schedule at Moneypoint. If it is decided to add additional units, the period of large construction wage bills would be extended by another three years (or more).

Table 4.21: *Labour force projections 1980–1989 (assuming three units are constructed), classified by occupation, and total take-home pay, at 1980 pay rates, estimated from these projections*

	1980			1981		1982		1983		1984		1985		1986		1987		1988		1989	
Occupation	*June*	*Aug.*	*Dec.*	*June*	*Dec.*	*June*	*Dec.*	*June*	*Dec.*	*June*	*Dec.*	*June*	*Dec.*	*June*	*Dec.*	*June*	*Dec.*	*June*	*Dec.*	*June*	*Dec.*
Clerical/administration/technical	44	46	80	184	195	212	233	280	225	246	243	244	244	237	220	195	135	50	50	15	15
Skilled/supervisory	90	119	65	171	221	25o	309	295	395	433	455	432	432	401	378	185	80	42	30	25	–
Semi-Skilled/unskilled	62	100	110	195	304	302	318	295	250	251	262	244	244	232	222	140	125	83	45	25	–
Total	196*	265*	255	550	720	770	860	870	870	930	960	920	920	870	820	520	340	175	125	65	15
											IR£'000										
Total weekly take-home pay received by all workers	31.70	30.92	29.76	65.06	84.55	91.03	102.05	103.26	104.43	112.64	116.33	111.52	111.52	105.36	101.46	62.32	39.87	20.30	14.68	7.72	1.79
Disposal of take-home pay																					
Spent in Clare		1,134.55		2,761.80		3,564.26		3,833.96		4,232.32		4,117.32		3,817.90		1,886.43		645.73		175.55	
Spent outside Clare		463.41		1,128.06		1,455.82		1,565.98		1,728.70		1,681.72		1,559.42		770.51		263.75		71.71	
Total annual take-home pay (site workers)		1,597.96		3,889.86		5,020.08		5,399.94		5,961.02		5,799.04		5,377.32		2,656.94		909.48		247.26	
Permanent Station Staff																					
Numbers Employed		—		—		—		—		72		165		260		300		300		300	
Take-home pay		—		—		—		—		880.00		1,440.00		1,760.00		1,920.00		1,920.00		1,920.00	
Amount spent in Clare		—		—		—		—		808.72		1,323.36		1,617.44		1,764.48		1,764.48		1,764.48	
Total amount spent in Clare (all workers)		1,134.55		2,761.80		3,564.26		3,833.96		5,041.04		5,440.68		5,435.34		3,650.91		2,410.21		1,940.03	
Total take-home pay (all workers)		1,597.96		3,889.86		5,020.08		5,399.94		6,841.02		7,239.04		7,137.32		4,576.94		2,829.48		2,167.26	

Note: * The figures for site staff in 1980 are not the same as the projections given in Tables 1.1 and 1.2.

Table 4.22: *Estimated expenditure in Co. Clare, at 1980 prices, on various commodities and services in the years 1980 to 1989, assuming three units are constructed (includes alleged amounts saved)*

Commodity or service	*1980*	*1981*	*1982*	*1983*	*1984*	*1985*	*1986*	*1987*	*1988*	*1989*
					IR£'000					
Food	264.53	630.75	821.71	877.22	1,166.59	1,256.07	1,252.57	822.92	543.30	437.28
Drink and tobacco†	121.67	282.05	372.65	395.30	535.31	574.70	571.55	360.34	237.84	191.48
Clothes	101.88	240.46	316.73	344.95	468.21	504.43	501.90	306.68	202.52	162.96
Rent	90.79	223.38	285.59	303.14	391.57	422.63	423.10	300.47	198.33	159.66
Gas, electricity, etc.	47.21	107.75	145.79	163.57	231.34	249.10	246.67	130.34	86.00	69.25
Car expenses	172.15	423.69	545.59	595.22	783.28	847.04	846.44	560.41	369.86	297.79
Other goods	127.38	327.04	404.70	413.63	500.28	540.75	545.92	464.40	306.68	246.77
Services	60.77	152.03	193.64	209.73	271.08	293.44	293.92	204.82	135.16	108.84
Other expenditure	148.17	374.66	477.85	531.21	693.37	752.53	753.28	500.54	330.52	265.98
Total	1,134.55	2,761.80	3,564.26	3,833.96	5,041.04	5,440.68	5,435.34	3,650.92	2,410.21	1,940.01

Note: † As in all expenditure surveys, spending on drink is likely to be understated but is counterbalanced by overstatement of some other items.

rent, 5 per cent on gas, electricity, etc., 15 per cent on motoring expenses, 11 per cent on other goods, 5 per cent on services and the remaining 11 per cent on miscellaneous items.

Table 4.23 shows the regional breakdown of the expenditure within Clare. This follows closely the distribution of these workers by residence as shown above. Almost half of expenditure is incurred in the Kilrush/Killimer area and one-quarter in Ennis/Shannon. Thirteen per cent is spent in Kilkee and the remaining 16 per cent in other areas.

Table 4.23: *Percentage distribution of total expenditure by site workers in different parts of Clare*

District	*Percentage all expenditure in this district*
Kilrush/Killimer	45.0
Kilkee	12.7
Ennis/Shannon	26.1
Cooraclare/Cree/Doonbeg/Kilmihill/Miltown Malbay	14.5
Knock/Kilmurry/Labasheeda/Lissycasey	1.7
All Districts	100.0

Other Expenditure in Co. Clare

As mentioned in the introduction to this chapter, the ESB and its contractors will purchase substantial amounts of goods and services; machinery, equipment, building materials, canteen equipment and supplies, etc. Payments will also be made to the Co. Council for road construction and maintenance, water supply, an additional social worker, etc. It is estimated that about IR£160 million will be spent in Ireland on such items over the next ten years.

It is impossible, however, to estimate with precision how much of these expenditures will take place within the impact area. Many of the actual purchases will be made years hence by contractors, and ESB have no knowledge of where or with whom the transactions will take place. Moreover, many of the contractors and the ESB purchase nationally or locally as prices, availability, and reliability of supplies dictate. These cannot be known in advance for the full construction period. Despite these difficulties, we felt obliged to develop some estimate of materials and services purchased in Clare

since the amounts involved, though less than direct wage and salary payments, are far from trivial.

Consultation with ESB officials and potential suppliers suggest that materials and services purchased in Clare should be in the vicinity of IR£10 million which includes IR£1 million or so for labour not included in the wage bill in Table 4.21. In addition, the Co. Council will have to spend considerable sums over and above normal costs on water, sewerage and roads, possibly IR£2 million per annum on average over the next decade. At 1980 prices, then, an average of IR£3 million per annum over the period 1980–89 will probably be spent in the impact area or a total of IR£30 million in addition to direct wages on the site.

Furthermore, as explained in Chapter 6 about 200 houses will be required for permanent station staff, commencing with 40 houses in 1984 and finishing with 65 in 1989. Sites are already available from the Rural Housing Organisation for about 170 houses and the Co. Council could supply a further 30 sites from a land bank already available, though it is likely that some of the workers will purchase their own sites and erect their own houses. For buildings on the present RHO and Co. Council sites the cost of a three-bedroomed house, at 1980 prices, would be about IR£20,000. We estimate that larger houses on other sites would run at about IR£30,000 and if we assume that two-thirds of the smaller houses will be built and one-third of the larger, then the total cost of 200 houses, at 1980 prices, will be about IR£4.7 million. In addition about IR£1 million extra capital expenditure will be needed for schools. Total other expenditure therefore in the Moneypoint region over the 10 year period will be about IR£36 million.

Induced Economic Effects

The preceeding sections provided estimates of the direct increase in incomes in the impact area. There will be further indirect effects. A portion of the increased income generated by these local outlays will be re-circulated in the impact area, primarily on additional consumer goods and services. The additional round of income generated will, in turn, give rise to another round of spending. This "multiplier effect", complex in operation though simple in concept, is the source of much of the exaggerated expectations with respect to the financial gains to local communities from large industrial developments. If all of the income received were spent locally, successive rounds of re-spending would, indeed, result in very significant changes in total income and employment in the region affected.

Both economic analysis and numerous case studies indicate, however, that the local multiplier effect is typically quite small when industrial plants are located in rural communities. The actual amount of respending in the impact

area from wages paid to local and non-resident workers will be much smaller than the initial payments. As indicated in the surveys, even local workers are certain to spend part of their additional income in shops outside the impact area. Non-resident workers will spend a significantly larger part of their incomes outside the area and may, in addition, send remittances to families at home which will not show up as local spending. Both groups will pay taxes on some of the additional income and will save a portion of it, and not all of the savings will be reinvested locally.

Similarly, purchases from local firms and extra spending on infrastructure will not accrue entirely as income to local residents, since much of the expenditure will be drained off in purchases of materials and inventory from outside the region. Only value added by local business firms – the difference between total sales and goods and services purchased "outside" – will generate local income; and this will be subject to savings, tax, out-of-area retail leakages before generating another round of local income.

Just how important these leakages are, and the resulting size of the multiplier effect, depend on a number of key factors. The geographic size of the impact area is significant; obviously, the smaller the area considered, the greater will be the leakages and the smaller the proportion of additional income generated by re-spending. The more diverse the local economy particularly with respect to wholesale trade and manufacturing, the greater will be the proportion of expenditures that will remain in the impact area at each successive round of re-spending. Current growth rates in the impact area are also important; a rapidly growing local economy will "trap" a larger proportion of consumer spending than a static one. If the project has significant forward or backward linkages (i.e., attracts firms that will use its output in the immediate area or puchases many of its inputs locally) the multiplier effect will be greater. Finally, the extent to which employment of local people on the project leaves other jobs unfilled will affect total re-spending.

If the Moneypoint project and its associated impact area are evaluated with respect to these factors, it is clear that multiplier effects from spending on the project will not be large. The West Clare impact area is small in size and population. It has little industry, and local firms are unlikely to be major suppliers to the Moneypoint project. The availability of substantially better shopping facilities and a major wholesale supply industry in nearby Limerick will siphon off some of the additional retail expenditure generated by the initial round of wage payments.

The size of the multipliers to be applied to disposable income and to other direct expenditures in the impact area can be determined with moderate accuracy only after a detailed survey of money flows in the local area on the

basis of a regional input-output matrix. As such a matrix is time consuming and expensive to construct, it was thought at first that we might draw on the large number of case studies of local economic impact which are available from other countries. An examination of these studies, however, revealed that many were not entirely applicable to Clare while in the case of most of the others it was not at all clear what the derived multipliers should be applied to; whether to total expenditure by the builders on wages and construction materials regardless of where the materials were purchased or to expenditure on wages and materials purchased in the local area, or to wages alone, regardless of where spent and so on. In view of these difficulties we decided that it would be useful to make a special input-output model for the Moneypoint area so as to be quite specific as to what was being talked about when we referred to a regional multiplier for the area. We also felt the exercise would be useful, apart altogether from the derivation of multipliers. Input-output models have many uses in regional economics and it was hoped that in the course of making this model we would derive a methodology which would be helpful in the construction of such tables for other regions. As far as we are aware no such methodology for Irish conditions has ever been published and, generally speaking the methods used in other countries may not be suitable here. We do not have the same kind of regional statistics as are available elsewhere and we are aware that in the past some other Irish workers had difficulty in getting co-operation from local businessmen in the preparation of regional tables.

Our main job then was to determine how useful for input-output purposes were the data already available from published sources, what extra data would be required from other sources and how these data might be obtained, i.e., by letter, postal surveys, interviews, telephone calls, etc. Considering that in the basic Moneypoint study some interviews and surveys had been carried out in Clare it was felt that the extra cost of obtaining the additional data would not be great.

The procedure adopted in preparing the model which related to Clare county as a whole[7] is explained in some detail in Appendix III of this Report. We have confined the description to an appendix because it is of a rather technical nature and ordinary readers are not likely to be very interested in the details. We hope, however, that students of regional economics who may wish to construct similar models for other areas will find the description useful.

[7]Because the impact area is not an administrative unit it would be very difficult to construct an input–output model for it. It would mean trying to split up local government and other expenditure and income in very arbitrary ways.

Results of Input-Output Analyses

The income and employment multipliers from the matrix are given in Table 4.24. This shows that the household income multiplier for all Clare residents including the permanent ESB operating staff at Moneypoint is 1.26 and that for the Moneypoint construction workers is 1.21. The latter figure means that every IR£ take-home pay of Moneypoint construction workers generates extra disposable income in Clare of IR£0.21. Hence, if we assume that the proportion of local to outside construction workers remains at its 1980 level over the coming decade, the estimated disposable income of IR£36.9 million (at 1980 prices) of these workers over the ten years, 1980 to 1989, should generate a further IR£7.8 million disposable income in the county. Also the total take-home pay of IR£9.8 million for the permanent station staff, for the period 1984–89, should generate extra annual income in Clare of IR£2.5 million (9.8 x 0.26). The other expenditure in Clare in connection with the project such as that on houses[8] for permanent station staff, school rooms, roads, water, sewerage and construction materials have much lower induced effects. Every IR£ spent on construction generates income in Clare of IR£0.41, while expenditure on chemicals and clay products, such as cement, has a multiplier of only IR£0.12. The weighted average for all these other expenditures is estimated at 0.40. Hence, the total direct, indirect and induced income in Clare over the decade, 1980 to 1989 from wages paid to construction workers and permanent station staff, expenditure by ESB and contractors on materials, construction work on roads, schools, etc., by the Co. Council and expenditure out of savings on house construction by permanent station staff should be about IR£71 million. This is estimated as follows:

			IR£
Construction workers' incomes	36.9 x 1.21	=	44.65
Permanent staff incomes	9.8 x 1.26	=	12.35
Infrastructure (Roads, houses and schools) by ESB, Co. Council and Government Departments	35.7 x 0.40	=	14.28
Total		=	71.28

The income multipliers of 1.21 for Moneypoint construction workers and 1.26 for permanent station staff seems to be in line with the results obtained from a large number of similar case studies in other countries. For example, Mackay's study (1978) of the East Ross area in Scotland yielded an income multiplier of 1.12 for the construction phase and 1.24 for the operating

[8]It is assumed that mortgage payments on these houses will be made out of savings which are considered a leakage in preparing the household income multiplier.

phase of the B.A. plant. Mackay's review of other empirical studies of regional multipliers in the UK yields similar figures. Archibald (1967) suggests income multipliers of 1.2 to 1.7 in planning regions of the UK with the larger figure confined to large regions. Brown (1967) arrives at figures of 1.21 to 1.28. Sadler's (1973) analysis of the Angelsey aluminium smelter resulted in income multipliers of 1.26 to 1.5 for the construction and operational phases. Greig (1972) indicates income multipliers of 1.37 to 1.41 for Highland Industrial Development Board fishery investment schemes, but these reflect tight linkage with local boat-building and fish processing. In the US, Bish, *et al.* (1977) suggest local multipliers of 1.2 to 1.5 for energy installations with the higher value limited to towns with populations in excess of 5,000. Summers (1976) reviewed a large number of US case studies and concluded that *ex post* data rarely support multiplier estimates in excess of 1.2. Bourque (1971) finds an income multiplier of only 1.2 for the State of Washington.

It should be stated, however, that because of the methods used in constructing the different input-output tables the results from some of these studies may not be entirely comparable with that from Moneypoint. The Clare multipliers relate to take-home incomes only, whereas some of those quoted above appear to relate to aggregates of income and expenditure on construction and materials.

The employment multipliers for household income from the Clare model worked out at 0.07 for Clare residents and at 0.05 for all Moneypoint construction workers, including locals. The latter figure means that for every IR£100,000 per annum in take-home pay received by Moneypoint construction workers five extra jobs will be created in the remainder of Clare. As in the case of all multipliers this is an average figure based on current Clare business structures and may be on the high side for Moneypoint income. Much of the demand for additional consumer goods and services in rural areas resulting from a new industrial plant is usually met by fuller utilisation of excess capacity in existing businesses and of under-employed labour, rather than by building new facilities or hiring more people. Indeed, to some extent, labour employed from the surrounding areas by the new enterprise may not be replaced. On both counts, therefore, the number of additional jobs over and above direct employment would not be expected to increase proportionally with the increase in local incomes. However, the employment created by the extra infrastructural facilities proposed will not be negligible. The relatively high employment multiplier on construction (see Table 4.24) indicates that expenditure of a few million IR£ per annum on roads, sewerage, etc., could create much extra work in the county, though probably not as much as the multiplier of 0.096 indicates. It is estimated from the employment multipliers in Table 4.24 that the expenditure of IR£3.57 million per annum on in-

frastructural facilities, school rooms and houses, will generate extra employment in the region of about 330 workers (3.4m./1,000 x .096 = 330). This figure, however, may be on the high side. There is likely to be excess capacity in the area already and technology will probably change over the decade. A maximum of about 200 extra workers is as much as can reasonably be expected.

Table 4.24: *Income and employment multipliers from Clare input-output table (1979)*

Sector	*Multipliers*	
	Household income	*Number of workers required per IR£1,000 final demand p a*
1 Agriculture, forestry, fishing	0.760	0.214
2 Sand, stone, gravel	0.281	0.081
3 Food,* drink tobacco	0.063	0.020
4 Textiles, clothing and footwear	0.137	0.050
5 Wood, furniture, paper	0.134	0.045
6 Chemicals and clay products	0.124	0.033
7 Metals and engineering	0.221	0.063
8 Construction	0.407	0.096
9 Electricity and gas	0.089	0.033
10 Trade margins	0.650	0.162
11 Transport purchased	0.461	0.101
12 Services	0.763	0.184
13 Household income (all Clare residents)	1.263	0.068
14 Household income (Moneypoint construction workers)	1.207	0.050

*Processed food coming mainly from outside Clare.

Chapter 5

EFFECTS ON OTHER INDUSTRIES

As indicated in Chapter 3, the Moneypoint project may, in the short run, exert some disruptive influence on local industries with which it competes for labour – principally residential construction firms, transportation, local government services (e.g., road building), and various skilled trades related to heavy construction. In this chapter, a number of other potential impacts are examined.

Hot Water Usage

Power stations release large quantities of hot water as a by-product of electricity generation. Up to very recently this heat has not been utilised in Ireland, but with the present high cost of energy there has come a realisation that efforts should be made to use it in some productive capacity.

In other countries waste hot water from power stations has been used for three main purposes, namely, district heating, horticultural production (glasshouse heating) and aquaculture (i.e., fish farming).

Studies by the ESB on the feasibility of District Heating schemes in Dublin and Cork are currently underway. The results of these are not yet available, but it appears reasonable to say that District Heating is not seen as a viable proposition in the Moneypoint area. This is a very isolated area and the 300 MW units being installed are much too big for the small schemes which could be developed around them. With regard to other uses the relatively small Lanesboro station in Co. Longford has been modified to supply heat to a horticultural enterprise. At present 2 acres out of a potential 10 acres are under glass and while the scheme has been in operation for over a year it is too early yet to assess overall economics. The initial results are, however, promising.

As in the case of District Heating the size of the units at Moneypoint would require a very large horticultural operation to justify the plant modification required, but the possibility should not be ruled out. Experiments on the use of waste heat from large units for horticultural purposes are underway in Drax station in UK and the ESB is keeping a close touch with the results.

At the moment the possibilities for fish farming appear to be the most promising. At the present time there are facilities on a commercial or pilot scale at more than 30 power stations throughout the world for aquacultural production. The possible advantages of hot water in these enterprises include faster growth, the culture of desirable species in regions where it is not possible to farm them under prevailing water temperatures, and joint usage with the power station of transportation and security (Aston, *et al.* 1976).

The disadvantages are dependence on power station plant operation and schedules, incidence of disease and parasites at the higher temperatures, the need for more oxygenation and problems of water quality from chlorine additions for condenser clearing.

Species cultured at stations in different parts of the world are: catfish, trout, eels, tilapia, carp and prawn. The species which appear most suitable in the various experiments are carp and eels. These are able to survive and thrive at high temperatures and can tolerate relatively high levels of chlorine and ammonia in the water and relatively low levels of dissolved oxygen.

The technology of warm water aquaculture is still in its infancy, even abroad, and there are very few commercially profitable enterprises currently in existence. Indeed reliable information on the production costs of any of the existing enterprises are difficult to obtain. However, on the basis of experiments carried out at the Ratcliffe on Soar power station in the UK it would appear that there are possibilities for successful commercial production of carp and eels (ibid. p. 43).

The ESB is one of the leading practitioners in marine aquaculture in Ireland and it is already investigating the use of low grade heat for fish farming at a number of its stations. Preliminary steps in site selection have already been taken based on consultants' reports, and results from foreign experiments, but a long period of pilot testing will be necessary before decisions on viability can be made. The ESB state that its involvement in any project will be dependent on the project's commercial viability; hence we cannot at this stage make any predictions as to the disposal of the waste heat at Moneypoint. We can only hope that it can be put to economic use.

Use of Ash and Clinker from the Generating Plant

When the generating plant is in operation at full capacity a large amount of ash per day will be produced. As pointed out in Chapter 2 arrangements have been made for storing this ash on a site of 126 acres which can hold 3 million cubic metres of ash. The present site is expected to last for 8–15 years, depending on the type of coal used and the number of units in operation. After that further land will have to be used for storage while the original site will have to be landscaped. It would be of great benefit to the ESB, therefore, if this ash could be used for some structural or industrial purpose.

While boiler ash is used extensively in highly industrialised countries it has not so far been used to any significant extent in Ireland. From time to time the ESB receives inquiries but so far nothing has come of these. In Moneypoint 80 per cent of the ash will be fine ash, removed through the precipitators and 20 per cent will be taken from the furnace bottom. Fine ash can be used as a pozzolan, as a mineral filler in bituminous concrete as a processed material or for

specialised application such as oil tank dykes and fill cover, etc. The chemical composition of the ash determines the range of uses to which it can be put and the composition can vary with the source of the coal. Furnace bottom ash can be used as a road material for fill and we recommend that it be experimented with in Clare for this purpose. If found successful it could presumably be obtained free from the ESB and could thus save the Co. Council considerable sums for road fill. This saving could be used to re-surface further lengths of road or for other purposes. The amount involved cannot be estimated at this stage since we do not know if the ash will prove suitable for road fill in Clare and, if it is, what amount will be used.

Linkages with Other Industries

The extent to which any large, new industrial plant will provide an incentive for new industry to set up in an area and/or induce additional growth in other industry is dependent in large part on the linkages, both forward and backward. In short, if the new plant buys substantial amounts from other firms best located in the immediate vicinity or if its output is to be processed locally or used as a source of material for other industrial activity, then the inducement to further expansion might be important. Both experience and common sense point to the fact that electric power generating plants have few linkages in both directions. Once the plant is constructed, the only important inputs will be fuel, which will come from overseas, and replacement, repair and maintenance items for the heavy equipment in the plant. The latter would normally be expected to come from the original manufacturers, since their volume of sales throughout the world provides an opportunity to manufacture and stock replacement and repair parts at minimum cost. Electric energy produced by the plant will, of course, be made available nationwide, and provides no cost advantage for major electric using plants in the immediate vicinity. It is not an output that would be important for small local industry.

One potentially important exception might be noted. A plant as large as Moneypoint requires a wide range of small items of various sorts that may be of no particular significance to primary suppliers of the equipment but which might support a local fabricating and machining plant prepared to produce such items to order as required, particularly if other plants in Clare and North Kerry would be interested. In addition to the convenience of having such a plant adjacent to Moneypoint and Tarbert, it might relieve the aggravating problem of long delays in receiving small but essential parts from abroad which have plagued many industrial operations in Ireland. If enough of a market could be found to support such an operation, Moneypoint would probably use it to some extent.

Apart from this possibility, and the general improvement in the range and skills of labour supply in the west Clare area which might result from the extended construction phase at Moneypoint, there is no reason to anticipate much of an increase in the incentive to locate new industry as a result of plant construction or operation.

The timing of the Moneypoint project, coinciding as it does with the alumina plant in Aughinish Island and a prospective zinc smelter in North Kerry, probably would reduce any interest in locating other industry in West Clare until after 1983–1984. Conversations with operators of the major facilities in West Limerick and North Kerry indicate that the extensive construction in those areas, coupled with Moneypoint itself, will make it difficult to obtain sufficient local construction labour for the next three to four years. Thereafter, there would be both opportunity and need for new industry in West Clare if it can be provided from some other source.

It is also worth noting, though impossible to quantify, that the extensive period of increased employment and economic activity in the impact area in West Clare could bring about an intangible but important change in attitude toward industrial employment and growth on the part of the local population. To the extent that this stimulates efforts to attract new plants and backs it up with an improved labour supply, better roads, and other offshoots of the Moneypoint project, the establishment of viable local industries may be easier in future than it has been in the past.

The effects of the Moneypoint project on retail and service industries are more complex than the aggregate numbers presented in Chapter 4 would indicate. Our survey results suggest that the direct effect on consumption spending in the impact area at the peak of the construction phase would be in the vicinity of IR£5 million annually. We were also able to make estimates of the division of those expenditures by major project category and the districts where those expenditures will actually take place.

Analysis of similar situations in Scotland and Wales suggests a number of changes in spending patterns as the result of a large project in a relatively scattered rural area. First, the increase in the general level of incomes tends to change spending patterns, with increased demand for goods of better quality, more diversified retail and service offerings, and larger purchase of new consumer durables such as furniture, rugs, appliances, etc. These changes will be particularly evident as new housing is provided for Moneypoint workers. Whether or not these increases will be felt in small local communities adjacent to the plant depends significantly on the way local merchants adapt to changed demands. If, for example, shops in Kilrush are prepared to expand their facilities to prevent overcrowding and to change their offerings to match the observed changes in spending by new residents and construction workers,

they may capture a substantial part of the new flow of consumer spending. If not, experience in other areas suggest that people now enjoying higher incomes and greater mobility will go to better shopping facilities even over considerable distance. Thus, if local shops are slow to adapt, more of the favourable impact of Moneypoint on retail trade and services may be felt in Ennis or even in Limerick rather than in local towns. For obvious reasons the share of increased consumer trade enjoyed by shops in the smaller towns will also depend heavily on the effectiveness with which housing problems for both construction and permanent workers are resolved and the extent to which site workers are made welcome in the communities where they live.

Based on experience in Scotland and the UK, we do not expect the increase in consumer spending in the impact area to affect retail prices seriously. Most shops and service facilities in small towns tend to have ample under-utilised capacity to handle a larger volume, and wholesale supply channels are readily available. If local merchants do try to raise prices, the travel alternative will simply shuttle trade to other areas or new shops will enter the market. There may be some congestion and spot shortages as the construction crews reach a peak, but Moneypoint does not appear large enough to overload the retail structure of the impact area over long periods.

The principal beneficiaries of the Moneypoint project, from the standpoint of induced consumption spending, would appear to be in the retail and wholesale trades, miscellaneous services, transportation, and public utilities. Kilrush, Ennis and Kilkee, are likely to be the localities which will enjoy the greatest share of the increased volume of trade.

The effect which the Moneypoint project will have on agriculture in Clare is problematical. Some small farmers will take up work on the site and thus adopt a more extensive low output per acre type of agriculture. Others, however, may see the project as providing increased demand for certain produce and will increase output to cater for this demand. Both the Clare agricultural and horticultural advisers are very optimistic in this regard. They see the Moneypoint project as offering opportunities from which good farmers will benefit, particularly in the liquid milk, fruit and vegetable areas.

In the Killimer area alone there are at present 30 growers of horticultural produce and these growers have intimated that they are prepared to produce extra crops when the market expands. Examples of the commercial crops produced by certain growers are: potatoes (25 acres), commercial orchard (2 acres), cabbage (3 acres), carrots and turnips (2 acres) and mixed vegetables (2 acres). In addition to the regular growers, there are a number of young farmers in the area who have been to agricultural colleges and who are already gearing themselves to supply the fruit and vegetable market. There are also 10 or so boys and girls now working in horticulture outside the

county who have expressed a desire to come home. It is expected that by the time the station is operational a number of growers in the area will be in the production of nursery stock on a fairly substantial scale. There is already a large nursery in Scarriff employing 100 people which has six acres of glass, half an acre of plastic tunnels and 40 acres of nursery, as well as an extensive landscaping business. It sees the Moneypoint project as providing an extra source of demand for its products.

The authors have had meetings with the Chief Agricultural Officer for Clare and a number of his staff. These officers are fully aware of the opportunities and challenges which the Moneypoint project offers and they are determined to exploit the situation to the maximum extent by having local farmers produce as much as possible of the fresh foods required. Even though this may happen, we cannot be over optimistic about the effect which Moneypoint will have on agricultural development in Clare as a whole. There is currently a very large import of agricultural and horticultural produce from outside counties and this is likely to increase as demand grows. Clare growers will, therefore, be in competition with well established outsiders whose soil and climatic conditions may be more favourable than those obtaining in Clare. Competition will be keen and it will not be easy for newcomers to break into the market. The agricultural advisory staff with the aid of local farmers' organisations can, however, help greatly in this regard, by carrying out elementary market research, advising on production, grading and presentation and even organising delivery and market outlets.

Effects on Tourism

The effects of the project on tourism in the impact area are difficult to assess in advance. On the positive side, there is definite evidence from the experience of other countries that the site itself may divert some tourists to the area, at least for short visits. Another positive effect: greater demand for local facilities will result in service improvements and tourists could enjoy these improvements too, e.g., the Tarbert/Killimer ferry should become more profitable and increase its frequencies and level of facilities. The siting of the plant minimises any visual disfigurement of the landscape in the immediate area, and the provisions for monitoring and protection of both water quality and air quality appear adequate to prevent any negative impact on tourism from degradation of the natural environment.

The major adverse effect that appears to warrant serious consideration is the effect of the project on rents and costs of accommodation. As the supply of accommodation is fairly fixed, an increase in demand from both workers and tourists is likely to be reflected mainly in higher accommodation costs and this in turn could reduce the tourist trade. However, the Kilkee tourist season

is very short and with the site closing for holidays in early August together with excess capacity in the hotels, the project should have little adverse effect on the Clare tourist industry. The inevitable disruption of the Ennis/Kilrush road will, of course, cause some inconvenience. But the major renovation of the road between the site and Kilrush will alleviate major difficulties from that side, although the Killimer/Moneypoint stretch may require work if some inconvenience to tourists is to be avoided. The principal problem will clearly be on the Ennis/Kilrush road, where day-time slow-downs and increased road accidents can hardly be avoided over the five or six year period of peak construction activity. The absence of rail head facilities and limited capacity to accept deliveries by water means that virtually all construction materials and equipment other than the very heavy plant installation will have to come via road through Ennis.

One obvious and helpful step that can be taken has been confirmed: that is, to reduce the level of construction activity during the first three weeks of August – the peak of the tourist season. (This is a matter for decision by the contractors on the site at the time, and ESB can only play an advisory role.) Beyond this there is little that can be done other than to monitor traffic on the Kilrush/Ennis road, and to see that heavy slow moving loads are appropriately accompanied – measures that would be taken in any event.

We conclude that the effects of the plant on other businesses will almost certainly be positive. Linkages from the electric power generating plant to other activity are slim, and multiplier effects will be small. But the addition of 300 permanent jobs, together with the extended increase in local consumer spending during the construction phase, will mean a substantial boost to suppliers of general wholesale and retail trade, miscellaneous services, and transportation facilities. The negative impact in terms of "drying up" available local labour markets, road congestion, direct competition for certain types of labour and competition with the tourist trade seem most unlikely to offset the positive effects. Nevertheless, they should be watched carefully, particularly if the heavy labour demands in the construction phase conflict seriously with necessary housing development in the impact area.

Chapter 6

SOCIAL IMPACT

In this chapter we review and evaluate the sources of social impact which may be of potential importance. These cover the areas of conflict that have emerged from experience with large industrial developments in rural areas of generally similar characteristics in Ireland and in other countries.

Overt Friction and Conflict between Local People with "Outsiders"

In every case study we examined, and in conversation with many local people in West Clare, concern has been expressed about the likelihood of conflict between local people and project workers, particularly during the construction phase. The reasons for the concern are obvious. The plant will introduce large numbers of people into a relatively small community, inevitably overloading certain facilities. Some, at least, of the plant construction personnel have a different lifestyle from local residents. Based on the experience at Tarbert and elsewhere, it might be expected that a high proportion of the construction personnel will come from outside the local area, and many of these will be single men or married men whose families will not accompany them. In both age and family status, the workforce during the construction period represents a very different group from local people in terms of income levels, marital status, working hours, and attitudes toward extra-curricular activities during time off.

Before construction started at Moneypoint concern was expressed by some people in West Clare about the impact of excessive drinking in the vicinity of a major construction project and the possibility of increased law infringement in the impact area. Similar fears have been voiced by opponents of other projects in the case studies reviewed.

Experience in other areas is mixed. Some of the small western American towns affected by energy developments did encounter real problems of this sort, but these were associated with the prospect of long-term growth and resulting changes in the composition of the town's population and its social attitudes. Moreover, in most instances little or no effort was made by local community or the project managers to anticipate these problems and make provision for their resolution. In Scotland some difficulties were experienced in isolated areas where large plants were constructed (e.g., Kishorn and Sullom Voe in Shetland). Both of these, however, involved projects located in small remote areas where the project workforce (6,000 workers at Sullom Voe and 2,000 at Kishorn) were much larger relative to the local population than at Moneypoint. In addition, the workers brought in included a much wider

range of nationalities and diverse religious groups than would be the case at Moneypoint.

More comparable situations would be the aluminium smelter at Invergordon in Scotland and the two power plants at Drax and Sizewell in the UK. In all of these cases the workers who entered the local area during the construction phase were nationals of the country, and while they came from diverse locations they were culturally very similar to local area residents. Most important, these plants, like Moneypoint, were to become permanent parts of the local economy, and management made real efforts to anticipate trouble spots, to provide useful contact points with local leaders, and to build an impresion of neighbourliness on the part of both management and worker groups.

The Scottish studies and the experience with Tarbert and Aughinish Island suggest that fears of crime and violence have been overstated in terms of the actual situation that developed. There is no denying the fact that large numbers of single men (or married men separated from their families), working long hours at arduous physical labour, will drink more than the average amount during off hours. Since the ESB does not contemplate (and the Co. Council does not wish) construction camp operations to confine workers to the site location, much of this extra-hour activity will spread to the local towns. The result is bound to be pressure on facilities such as pubs, hotels, dances and other social events.

This is bound to cause irritation at times, and conceivably problems could result. In general, however, experience in areas similar to the West Clare impact area is encouraging with respect to rowdyism and crime. In such areas there have been perceptible increases in the number of arrests and in the burden placed on local police forces. But most of the increased load consists of overnight stays in jail for excessive drinking, driving offences (also associated with drinking in many cases), an occasional outburst of fighting and other misdemeanours. It was noted in a number of places that the conflicts were much more often among groups of construction workers themselves and did not involve local people. In no instance did there appear to be a significant increase in crimes of violence.

There are good reasons to believe that this experience will be duplicated in the impact area in Co. Clare. The fact that non-local workers will be lodged in digs, houses, and flats rather than in isolated camps may impose a burden with respect to housing, but will tend to tie workers more closely to local people and local activities, thus minimising the tendency toward rowdyism and conflict. It will also spread plant workers over a much wider commuting range. Finally, the experience at Tarbert and the emerging pattern at Aughinish Island suggests that a surprisingly large proportion of young Irish

construction workers are more interested in high rates of saving during the period of their high overtime employment than in carefree expenditure on drink. Whatever be the reasons, studies of other areas and the nature of the arrangements to be made for housing construction workers in the vicinity of Moneypoint both suggest that increases in serious crimes will not be a major problem. Minor offences will increase, however, and the sheer mechanics of coping with the situation on a 24-hour basis will require additional police capability.

In each of the cases we reviewed and in conversation with people involved in the planning process in Scotland, the UK, and Ireland, the importance of community attitudes was stressed over and over again. The focal points for potential trouble can be identified well in advance, and if the community is prepared to make the effort needed to accommodate additional people and to provide avenues for association with local individuals, families, and organised groups, the likelihood of anything more than sporadic difficulty seems remote.

Changes in Community Life

A more subtle and potentially more important aspect of the impact of a large industrial plant involves the possibility of changes in community attitudes: toward farming and industrial employment; in community social activities; in local leadership; and in family and neighbour relations. During the long period of construction, and – to a lesser extent – during the operating phase, a large number of local people will join outside workers at the plant in much longer working hours, a six to seven day work week, and greater commuting distances than that to which they had been accustomed. Part-time farmers, for example, may find it very difficult to adjust to these schedules. This will invariably bring changes in living habits. The reduction in free time changes social relations with both family and neighbours, and tends to shift local plant workers and their families from informal types of social activities centred in the local neighbourhood and in the town hall and church to "purpose-built" facilities where recreation can be "packed into a shorter period of time". We are not sure that this is necessarily undesirable, particularly if the changes are gradual enough to be assimilated by the community and if the change in hours of work and leisure are matched by changes in appropriate facilities. But it does represent change, and this is not usually achieved without some disruption, particularly in traditional communities of the type that will be affected in West Clare.

It is conceivable that some tension might be created in the community by disparities in income – plant workers, both outside and local, will receive incomes well above the local average. In addition, the incoming personnel, par-

ticularly the initial operating staff, will be made up largely of people with more technical skills and different living standards than local residents. Experience elsewhere, including Tarbert, reveals a tendency toward clustering of plant workers as well as skilled technical and managerial personnel. Whether or not this "ghetto effect" is bad or good is indeterminate, but it is at least possible that it could cause strains within the community unless specific efforts are made by both ESB and local community leaders to provide as many avenues as possible for assimilation of Moneypoint personnel into local activities.

Again, we emphasise the relatively small scale of the Moneypoint project relative to the impact area as compared to the Aughinish Island plant or the Scottish cases which we have examined. Moreover, the Aughinish Island plant and the Tarbert plant demonstrate the extent to which the cultural impact on the community can be minimised by providing as widespread local employment opportunities as possible.

Impact on Housing

In the other comparison areas analysed, the impact of a large industrial development on housing and educational facilities caused more social difficulty than almost any other factor. Given the size of the Moneypoint project relative to existing governmental and social service facilities in the area, there would not appear to be major problems in fields other than housing. The schools would seem to have sufficient capacity to accommodate the very modest increases to be expected during the construction phase, but some extra accommodation will be required when permanent staff levels measure to around 300 persons. It would appear, however, that medical and other social services will not be over burdened.

Housing, however, presents potential problems. Given the decision not to operate a camp at the site, the number of outside workers who must be accommodated within a fairly short distance of the site is substantial. While few problems have arisen to date, the real pressure is still to come. It is most important that the work of registering available housing facilities and matching them against the expressed preferences of site workers be carried through fully.

In discussing the housing situation it should be stated that builders or other house providers will be unwilling to build houses specifically for temporary construction workers in the Kilrush area. They are unlikely to take the risk of being left with these houses on their hands when the work is completed. Workers in other industries might take the houses over but the builder would have to be very sure of this before going ahead. It can be taken, therefore, that construction workers will have to locate in existing buildings in the area. The

power station operatives who will start to come about 1984 are, of course, a different proposition. Houses for these people and their families will have to be built fairly close to the station but this should present no insuperable difficulties; the occupiers will be permanent, well paid staff who can afford good quality houses. The ESB construction staff are in a somewhat similar position. As shown below these can be provided with accommodation in some fairly large nearby town.

In order to analyse the housing situation, therefore, it is necessary to classify the workers into certain groups based on their expected requirements. These groups are as follows:

1 ESB site staff
2 Local Clare and North Kerry construction workers, mainly unskilled and semi-skilled.
3 Outside construction workers, both married and single.
4 Permanent ESB station workers, some of whom will be from Clare and the remainder from outside the district.

The estimated numbers in each of these groups in the different years are shown in Table 6.1 and their housing requirements are discussed separately below.

ESB Site Staff

These are permanent ESB staff who will build up to about 60 in 1982 and remain at this, or even at a higher level (depending on number of units constructed) until the end of the decade. They are mainly engineers, supervisors/inspectors, administrative and clerical workers who move around the country from site to site supervising administration of contracts in the fields of quality control, cost control and adherence to programmes. The married workers usually take their families with them as they move about the country and for this reason they prefer to live in urban areas where they usually find good schooling for children and reasonable social conditions for spouses and children. Most of the married ESB workers at Moneypoint have opted to live in Ennis[9] even though it is some 30 miles from the site. The houses in which they live are supplied by themselves or by the ESB and the ESB units will be disposed of when the occupants move to a new site. These employees do not present a major problem from the housing point of view. They are a relatively small number of people living in a reasonably large town and there should not be any difficulty about supplying them with houses or other accommodation or of disposing of the accommodation when they leave.

[9]A small number are living in Kilkee.

Table 6.1: *Estimated number of workers* at Moneypoint in different years, assuming three units, classified by origin and marital status*

Construction workers (non-ESB)	*1979*	*1980*	*1981*	*1982*	*1983*	*1984*	*1985*	*1986*	*1987*	*1988*	*1989*
Locals											
(1) Married	35	55	125	158	169	185	180	164	78	25	11
(2) Single	40	65	145	184	198	216	210	192	90	29	12
(3) Total	75	121	270	342	367	401	390	356	168	54	23
Outsiders											
(4) Married (with spouses in Clare)	19	31	69	88	94	102	100	91	43	14	6
(5) Married (spouses not in Clare)	29	46	104	132	142	155	150	137	65	21	9
(6) Single	42	69	152	193	207	227	220	201	94	31	12
(7) Total (5) + (6)	71	115	256	325	349	382	370	338	159	52	21
(8) Total outsiders (4) + (7)	90	146	325	413	443	484	470	429	202	66	27
(9) Total construction workers (non-ESB)	165	267	595	755	810	885	860	785	370	120	50
(10) ESB site staff	20	25	40	60	60	60	60	60	60	30	15
(11) Total construction workers	185	292	635	815	870	945	920	845	430	150	65
Station Staff											
Outsiders											
(12) Married	–	–	–	–	–	38	66	96	102	108	115
(13) Single	–	–	–	–	–	24	44	54	48	42	35
(14) Total	–	–	–	–	–	62	110	150	150	150	150
Locals											
(15) Married	–	–	–	–	–	2	11	33	60	75	85
(16) Single	–	–	–	–	–	8	44	77	90	75	65
(17) Total	–	–	–	–	–	10	55	110	150	150	150
(18) Total station staff	–	–	–	–	–	72	165	260	300	300	300
(19) Total workers (11) + '(18)	185	292	635	815	870	1,017	1,085	1,105	730	450	365

*The figures are annual averages based on expected numbers present at different periods.

Local Construction Workers

At the time of our final survey of the construction workers in August 1980 there were about 130 such workers on the site out of a total of 265 from all areas. Of these workers some 50 per cent were married. All of the local single workers were living in houses, over 95 per cent of which were their own or were owned by parents or relatives. The balance were rented houses. None lived in flats or lodgings. Of the local married workers over 55 per cent were living in houses of their own or with parents or relatives, 33 per cent were in rented houses, while 11 per cent lived in rented flats or rooms. On the assumption that the same pattern of local to outside workers is maintained in future years, it is estimated that the local workforce will build up to about 400 by 1984, as shown in Table 6.1. These people, married or single will presumably live in their own neighbourhoods as at present, thus creating no housing problem.

Outside Construction Groups

It is expected that this group will build up to about 500 people by 1984, of whom about 230 will be single, 100 will be married with spouses in Clare and 160 or so will be married with spouses not in Clare (see Table 6.1). One would have expected that housing requirements would be much different for these different groups but the survey has shown that this is not so. There is a decided preference among all the workers for houses, flats and rooms rather than for lodgings (see Table 4.14). However, the actual situation is likely to change when large numbers build up on the site over the next few years. Houses and good flats will be scarce in the Moneypoint area and unattached workers may have to accept lodgings if they are to stay near the site. What is likely to happen, of course, is that workers, both married and single, will tend to locate farther away from the site in towns and villages which can supply houses and flats. Those who are parpared to go such distances should have little difficulty in finding good accommodation.

There are advantages in having outside workers as well as locals distributed throughout the impact area. Additional incomes will be received by more people; overcrowding of facilities will be minimised; and newcomers and their families will find it easier to join in community affairs. This is also consistent with the established policy of the Co. Council, which is to ensure, as far as possible, the dispersal of development throughout the county. The council has had, for many years, a rolling programme of local authority house construction aimed at building up the various villages and towns and strengthening the social fabric.

Dispersion of site workers does make transportation a problem, however. Establishment of bus services from central points to the plant has been con-

sidered, but it has been decided to rely on individually owned automobiles, with compensating allowances for workers travelling longer distances. In this situation ride-sharing develops quickly, reducing travel costs and petrol consumption. The additional flexibility of automobile travel is most important in the construction phase, when different contractors and ESB often have different working hours.

People with suitable premises in local towns should contact the Co. Development Officer, outlining what they have to offer and stating the price required. By doing this they advertise their accommodation and thus improve their chances of obtaining good paying guests. Indeed, town councils should be alive to this situation if they wish to attract visitors and hence trade to their towns. They should see to it that all suitable accommodation is immediately notified to the Co. Development Team.

On the whole, the authors are confident that sufficient reasonably good accommodation can be made available in the towns and villages of West Clare for all the workers coming to Moneypoint. After all, if the local workers are omitted, housing has only to be provided for about 100 families and 380 separate persons, all of whom can pay reasonable prices for their requirements. Committees will need to be organised in towns to welcome the visitors, particularly workers' wives, and to organise social functions. We feel that the Clare Social Service Council through its local committees and voluntary workers can help greatly in many aspects of this organisation. A first step would be to arrange meetings in all the towns in the impact area to discuss the situation and set up committees to make provision for the attraction of workers to the area. After this it would be a matter for the committee to see that the visitors are contacted when they arrive and are made to feel welcome.

An unavoidable effect of the influx of a large number of construction workers seeking accommodation will be an increase in the rents paid for the various types of accommodation. To date, however, rents and accommodation charges are little, if any, higher than comparable charges elsewhere. As the numbers build up, however, pressure on the available accommodation will increase raising prices substantially. As with site costs this will represent redistribution of income between the site worker and the landlords but it will also effect other workers creating demands for higher wages to counteract it. It could also effect the tourist trade but as explained in Chapter 5 we expect that this effect will be relatively small.

Permanent ESB Station Staff

By 1984 about 72 permanent station staff are expected to be employed in Moneypoint. By 1986 this number is expected to reach 260, while there should be about 300 there in 1987. All of these workers will be expected to live

close to the site, probably within a distance of 12 miles. If we assume that at the start 56 per cent (something less than the national average) will be married, then the number of houses required for these people will be about 40 in 1984, 76 in 1985, an extra 52 in 1986 and a further 70 in 1989 (200 in all). It will, therefore, be necessary to plan for the erection of 40 houses by 1984 and a further 160 or so in the five subsequent years. In addition, flats or lodgings will have to be available for the single station staff, of whom there will be about 32 in 1984, rising to around 140 in 1987 but declining to 100 in 1989 as the number of married staff increases. Some of these will probably be local Clare people living with their families in the early years, but the majority, even if from Clare, will have to find accommodation near the site as time passes (see Table 6.1 for profile of station staff).

There is no shortage of sites in the Moneypoint area. The Co. Council have a number of sites in Kilrush, some of which can be made available for housing for Moneypoint workers. The Rural Housing Organisation (RHO) has sites for up to 170 houses in Killimer, Cooraclare, Labasheeda and Doonaha and has options on sites in Kildysart and Kilmihill. This organisation, whose activities are described in some detail in the Appendix to this chapter (Appendix 6A) is prepared to build houses in any of these areas. It has an experienced sales manager who administers all aspects of house sales, involving loan and grant applications, execution of building agreements, procurement of CRVs, arrangement of bridging finance, etc., and provides an after sales service on all developments. Assuming that loans are available through normal channels, a body such as the RHO can make a significant contribution to solving the housing problem. Workers wishing to acquire sites and build their own houses should, of course,be facilitated also, but will have to make their own arrangements about legal matters, financing, and building.

The demand for extra houses in the area will increase the cost of sites. Such an increase represents a redistribution of income between house purchases and land owners and affects all housing in the area. It therefore tends to increase industrial and other costs. This, of course, happens in all industrialised areas and probably affects costs to the same extent everywhere. It will, of course, have some negative effect on the poorer sections of the Clare community in so far as it will make County Council houses dearer. The effect of this income redistribution is, however, impossible to quantify since there are so many variables involved such as better amenities more job opportunities etc., which have been made possible by the project and the associated activities.

Inconvenience in Travel

As stated in Chapter 3 the most obvious and intractable of the negative im-

pacts of the plant, on living amenities as well as on some business operations, will be the effects of heavy road usage during the construction phase. All of the studies in Scotland and the UK which we reviewed mentioned the difficulties imposed on local residents by increased use of local roads, even though in every case most of the construction materials and heavy equipment were delivered by rail or water and rigid control was exercised over the project-induced road traffic leading to and from the new plant. In the case of Moneypoint, no rail service is available, and it appears that only the very large units going into the plant that could not be handled by road will be delivered by sea. Thus, an unusually large flow of heavy traffic will be generated during much of the construction phase of the project. In addition, the substantial increase in commuting (reflecting greater travel by local employees and the decision to disperse outside workers throughout the impact area) will add a larger new element of automobile travel.

Major improvements, therefore, will need to be carried out over the coming decade if the roads are to carry the contemplated traffic and if delays, interruptions and accidents are to be minimised. These improvements will be very expensive and will involve higher than normal road grants from central funds. Unit costs of improvement are exceptionally high because of the nature of the terrain, some lengths being through totally boggy soil.

As stated in Chapter 3 a considerable amount of work has already been done on the Ennis-Kilrush road (N68). Some $4\frac{1}{2}$ miles of the worst sectors have been brought up to reasonable standards but there are still $22\frac{1}{2}$ miles to be fully realigned. Minimal standards for such a national secondary road are two lanes 24 feet wide and two hard shoulders each 8 feet wide, giving a total right of way of at least 40 feet. The present road surface is only 18 feet wide with a total right of way of 25 feet. It is estimated that the cost of bringing this road up to the required standard would be IR£9 million.

The road from Kilrush to Moneypoint (N67) has already been made adequate for the short term but it is still too narrow for the traffic on it. It needs further improvements, while an additional $2\frac{1}{2}$ miles of this road, from Moneypoint to the car ferry requires complete realignment. The cost of these improvements is estimated at about IR£2 million giving a total cost for the N67 and N68 roads of about IR£11 million. The Department of the Environment has now indicated (March 1981) that it has approved the above road construction plan which will be put into operation over the 1981/85 period as funds become available.

We have examined the county roads from the car ferry to the Ennis-Kilrush road with a view to selecting a suitable route to the latter. The current route is county road No. 462 through Knock to Shaughnessy's Cross in the townland of Lackwest – a distance of 8 miles. This, in the opinion of the Clare engineer-

ing staff, is potentially the best route but the road is very narrow and winding. To bring it up to a reasonable standard would cost about IR£3 million, so that the total cost of all the improvements suggested, at 1980 prices, would be about IR£14 million. It would also be advisable to improve some other road from the ferry to Kilrush which would by-pass the Moneypoint station. The selection of such a road is a matter for the Co. Council and we have no cost estimate.

Changes in Size and Age Structure of Population

The influx of new workers to West Clare will obviously lower the average age and change the occupational pattern and geographic distribution of population within the impact area. Over time, it is also probable that the project will provide enough employment opportunities for young men and women locally to reduce or eliminate out-migration of school leavers and young employable persons. If this is a temporary phenomenon, geared only to the "golden years" of the construction phase, it will decay fairly rapidly. If, on the other hand, the Moneypoint project is followed up by other employment-creating activity, the construction of the plant may mark the beginning of a significant long run change in the demographic characteristics of the population of Co. Clare. While this will also call for changes in the level and distribution of social services, such as education, medical care, utilities,etc., these shifts will occur gradually enough so that no major problem of accommodation should result. As indicated in a previous section, the more subtle and lasting effect may be a change in attitudes toward employment and residence, reinforced by changes in the age distribution and skill levels of the population following the stimulating boom period of the Moneypoint plant construction.

Summary and Evaluation of Social Impact

We conclude that there are relatively few areas of serious concern over the overall impact of the Moneypoint plant on social organisation and the quality of life in West Clare. Congestion, temporary overcrowding of recreational facilities, housing problems, and some increase in a few undesirable types of social behaviour are to be expected. But none of these appear likely to occur on a scale that would cause disruption of the basic pattern of life of people living in the impact area, and all can be ameliorated in varying degrees by conscious effort and planning on the part of the ESB, the Co. Council, and the communities affected. There is good evidence that the necessary communication and initial planning efforts are recognised as necessary and are underway.

Some of the changes that the project will bring about are desirable. While changes in work habits, work hours, and attitudes toward industrial employment may be upsetting to some established types of recreation and social in-

tercourse, they are accompanied by a broadening of opportunities and the possibility of creating an environment that will attract and hold productive young people who now leave the area. These effects may well take 10 to 15 years to work out, and if they are to be constructive, it will be essential for Co. Clare and the central government to assure continued higher levels of economic activity after the Moneypoint plant settles down to normal operating levels. The impacts seen as undesirable are clear enough so that positive action by local government and by community groups could be effective in minimising adverse effects.

A word of caution is in order, however. As indicated above, we cannot hope to present accurately developments that will be fully worked out only after 5 to 15 years. We can only hope to identify the impressions held now, relate them to experience elsewhere, and suggest the areas of actual or potential concern to local government and community leaders.

Initially, a stratified survey of local attitudes toward the project and its impact was considered. Pre-testing indicated, however, that it was too early to obtain reliable information in this way. The situation is entirely new to most local people; and since work on the project had barely begun, very few had any idea of what changes it might bring when construction activity reached its peak. We found that more intensive discussions with leaders of local groups provided a clearer picture of present attitudes, hopes and fears about future changes resulting from the project. It would be very desirable to conduct limited surveys (perhaps in 1983 or 1984 and again at completion of the plant) to test the accuracy of our economic projections and assessment of social effects.

Our review of other impact studies and interviews with project and community leaders in the area affected indicate that a *majority* of people reacted favourably to the project's overall impact on the community. New jobs, increased trade, and improved retail and service facilities weighed much more heavily in people's minds than congestion, modest increases in police burdens, and changes in social habits. The possibility remains, however, that a minority group with strong negative feelings may not be heard because they tend to be silent, or because the majority do not want to hear them. If minority views are to receive the consideration they deserve it is important to monitor local attitudes closely as project construction gets into full swing.

Appendix to Chapter 6

THE RURAL HOUSING ORGANISATION

The Rural Housing Organisation (RHO) was set up in Clare in 1972. Its headquarters are now in a self-constructed new office in Shannon Airport Town and its current workforce is 250. The patron of the organisation is the Most Rev. Dr Harty, Bishop of Killaloe and the Chairman/Managing Director is Rev. H. Bohan, who was also a member of the Moneypoint study group Steering Committee. The overall objective of the RHO is that of ensuring the survival and development of village life in Ireland but subsidiary aims are:

1 to contribute to the alleviation nationally of the problem of housing shortage and
2 to help in the resettlement of returning emigrants.

RHO was founded by Fr Harry Bohan in 1972 with a rural development objective. From his experience Fr Bohan concluded that rural development can only take place through a mixture of economic and social activities. He felt it was important that a start should be made by reintroducing young families into rural areas which had experienced a severe population decline. It had become obvious to him that one of the chief reasons for the decline in village population was the need for housing. Industries which are usually located in the larger towns draw a considerable part of their labour force from villages within commuting distance. Eventually, however, these commuters tend to settle in the towns, thereby denuding the villages of population. A number of factors contribute to this trend but the key factor is non-availability of housing in the villages. Recent experience by the RHO in the west of Ireland has shown, that given sufficient houses, most existing commuters from villages will settle permanently in these villages. Initially, therefore, the organisation is concentrating its efforts in villages within reasonable commuting distance of industrial growth centres and is offering package deals (job/house) to returning emigrants who can bring much needed skills to the country. As a result of a recent visit by RHO executives to London thirty families are returning to jobs and houses in Ireland. A majority of these are skilled people who have stated that the acquisition of a home is a major priority.

Since its inception RHO has constructed, or is in course of constructing, almost 1,000 houses in 60 villages ranging over nine counties. The company has now 202 houses under construction in counties Clare, Galway, Mayo and Roscommon and a further 250 houses are planned for 1981. It plans to build a minimum of 200 houses per annum over the next five years in counties along

the western seaboard and thereafter to extend its activities to the south eastern counties.

The members of the RHO meet formally at least once a month to enunciate policies and monitor performance and objectives. Costings on each development are produced at these monthly meetings and quarterly trading profit and loss accounts are also examined.

For control and administration purposes RHOs area of activities is divided into three regions, i.e., north-west, mid-west and south-west. Housing development in each region is controlled by an experienced contracts manager, while each building site is manned by a general foreman. The company's three contract managers report to a general building manager who is in charge of all projects. The company also has a consultant architect who draws plans and specifications and attends meetings as and when required. Contract managers are required to inspect each of the developments under their control at least three times weekly, while foremen make constant appraisal of construction standards and see that there is strict adherence to specifications and building regulations.

RHO does not involve itself in speculative building. Company involvement usually originates by a request from a local community who have identified a housing need and who can supply names of intending house purchasers in that area. RHO proceeds to purchase a suitable architect approved site in the open market and planning permission is then sought. At this point a detailed estimate of development and house building costs are prepared for the purpose of house price determination. This price includes overheads and a predetermined operating surplus for the site.

When a final decision is made to undertake a development, the company's solicitor proceeds with the registration of title in RHOs name. Houses are sold freehold – title being transferred to the client when purchase is completed, i.e., when the final account balance is paid in full. To facilitate forward planning, the company takes purchase options and purchases several sites in advance of building operations.

The following sites are available in West Clare:

Village	*Distance from Moneypoint*	*Acres*	*Number of Houses*	*Stage of Operation*
Cooraclare	5 miles	4	22	Planning received
Labasheeda	9 miles	16	60	Land purchased
Doonaha	14 miles	3	16	Planning received
Killimer	1 mile	3	16	Land purchased
Kilmihill	10 miles	3	20	Under investigation
Kildysart	12 miles	3	20	Under investigation
Carrigaholt	16 miles	2	14	Under investigation

The above land bank provides for the construction of about 170 houses but there are also a number of private sites available on which house design of choice can be accommodated. RHO is also in a position to acquire any additional land that demand dictates and is currently examining the possibility of acquiring land in Kilrush, Kilkee and Knock. Variations in house designs can be provided by the RHO architect and constructed by the company.

Chapter 7

POLICY IMPLICATIONS

Alternative Strategies for West Clare

As explained in Chapter 1 an Aberdeen University team summarising the Analysis of the Impact of oil installations on coastal towns in Northern Scotland, categorised the alternative strategies in three ways, namely:

1 containment and insulation
2 integration and absorption and
3 major economic and social change

Let us now examine how each of these strategies would apply in West Clare.

The first alternative would call for minimum involvement of the community in economic and social contact with the new industrial plant, even to the point of urging local people not to accept employment at the project in order to minimise adverse effects. Such a policy might have had some rationale for certain types of oil development projects (e.g., plants for construction of drilling rigs) where employment and associated economic activity could be expected to rise suddenly, hold for a limited number of years, and then disappear completely – leaving the community to pick up the pieces. But even in these cases, it turned out that policies of containment and insulation simply could not be made effective. Regardless of the desire of local communities to protect themselves from the "boom and bust" economic impact and other real or fancied social costs, the projects were simply too large relative to the local economies to avoid substantial repercussions. Moreover, an "insulation" policy denies local people the opportunity to share in the real economic benefits that will accrue as a result of steady new employment opportunities when the plant is in operation (not to mention some distinctly favourable effects even during the construction phase). There is little doubt that an extreme policy of this type is neither desirable nor feasible with respect to the Moneypoint plant and its associated impact area.

At the other extreme, some communities have sought to use new industrial plant development as a lever to promote major economic and social change of a more permanent nature. If the plant is large enough, and if the period of construction and operation promises substantial forward and backward linkages to other local industry, there is a real possibility of developing a rural area into a limited industrial type of community – hopefully with due attention to the important changes in economic structure, social relations, and public service requirements such development would bring. In effect, such a policy calls for guided growth and change of a permanent nature.

Again, this extreme position seems inappropriate for West Clare. As this report emphasises, the Moneypoint project is of a type that offers few incentives for additional related industrial development. It buys a few inputs from local sources in operation, and its output is sold to a national market with little or no advantages to any firm that might wish to locate close to the plant. Moneypoint, as such, will add three hundred permanent jobs to the local economy, and it will provide higher levels of stimulation during the construction phase, followed by a somewhat uncomfortable transition phase as employment drops to the more modest operating levels. But it does not provide a basis for major structural change in the economy or demography of West Clare. If this kind of change is to be undertaken, the initial stimulus provided by Moneypoint must be supplemented by a continuing effort to attract and hold other industrial development in the area.

The remaining option for local strategy – integration and absorption – seems to us the only sensible alternative for West Clare to follow. It calls for a governmental and community effort to utilise all the economic benefits that the new development may make available within the impact area – more permanent and temporary jobs, reduced migration of young people, better retail and service facilities, and a broader range of skills – without any fundamental changes in the social structure or way of life in the impact area. Specifically, it poses the need to identify bottlenecks in the provision of necessary services (e.g., housing, expansion of retail trade, transportation), taking appropriate steps to prevent these from restricting local economic opportunities, and – most important – planning even at this early stage for the wind down period which will inevitably follow as construction is completed and employment and induced economic expenditure in the area is reduced. Such a policy contemplates some definite economic gains for the community, while holding undesirable social changes to a minimum through conscious action by community groups and local government (with the assistance of ESB and, in some cases, the national government). It appears both possible and desirable to follow a course of this sort in West Clare.

Relation of Impact Area to the Nation

It should be emphasised that the economic impact of a large electric generating plant on a small area includes a substantial transfer effect to the rest of the nation from the local citizens affected. The benefits from the project accrue to the citizens of the nation generally. Yet, as this study has tried to quantify, the plant will increase the costs of local government in regard to roads etc. In addition, the modest but real social impacts involve the shouldering of some inconvenience by local citizens for the benefit of the nation at large. The local people, many of whom will not gain financially from

the project, should be compensated in some way for their inconvenience. To date, as documented in previous chapters, the ESB has contributed considerable amounts above those stipulated in the planning permission document toward these costs. We recommend consideration of a further source of compensation to the Co. Council in the form of a bounty in lieu of rates on the station from the central government, as is done for state buildings. To obtain such a bounty the station would need to be valued for rateable purposes.

Summary of Recommendations

In this section we summarise the recommendations in other sections of the report.

1 Of the three broad local responses to Moneypoint – containment and insulation, integration and absorption, and major social and economic change – only the second appears feasible and sensible for Co. Clare and local communities. The first is probably impossible, and would, if attempted, reduce the very real local economic benefits of the project. Moneypoint alone simply will not generate the leverage to achieve major social and economic change even if that were deemed desirable (see pages 15–17 and 96–98).

2 A mechanism is needed to co-ordinate estimates of need for various types of accommodation and to plan for needed new construction. This requires continued work to define available housing throughout the impact area, to match this against site workers' preferences as indicated in our survey, and to develop necessary schedules of new construction required. ESB, RHO, the Co. Council, IDA and private builders should be involved in the planning process (see pages 84–89).

3 Traffic conditions, particularly on the Ennis-Kilrush road, should be monitored and standby procedures developed to deal with severe problems that may develop from time to time (see page 80).

4 Power stations produce large quantities of hot water as a by-product of electricity production. Up to recent years such water has not been used in Ireland, but with the present high cost of energy there has come a realisation that efforts should be made to use it in some productive capacity. The ESB is already investigating the use of heat for both horticulture and fish farming at a number of its stations but a long period of pilot testing will be necessary before decisions on viability can be made. Hence, we cannot, at this stage, make any predictions as to the disposal of the waste heat at Moneypoint or of the income it may generate (see pages 74–76.)

5 A large quantity of coal ash will be produced at Moneypoint which will

require expensive storage facilities. It would be of great benefit, therefore, if this ash could be used for some industrial or structural use. In other countries ash of this kind has been used as road fill and we recommend that experiments be carried out in Clare to test its use for this and other purposes (see page 75).

6 The Co. Clare road engineering staff should continue to plan for country road improvements in the Moneypoint area. To date the Department of the Environment has approved plans for the realignment of the Ennis-Kilrush and Kilrush-Killimer roads. A scheme for the improvement of the route from the car ferry to the Ennis Road through Knock has also been worked out. This and a number of other country roads in the area are in very poor condition and need improvement badly (see pages 90–91).

7 Given the long-lead time for new industrial development, planning should start now to offset the inevitable decline in employment and income from Moneypoint when construction is completed. This is particularly important in light of the survey findings that a very high proportion of local site workers (and a considerable number from outside) expect to stay in Clare, and to continue in site work or industrial jobs. Unless local efforts, in co-operation with IDA, generate at least a few new industrial operations in West Clare, moderate to severe increases in unemployment will occur (see pages 9–12).

8 It might be desirable for the Co. Manager to form a monitoring committee, to deal quickly with unanticipated problems or conflicts that may arise. This need not be a permanent organisation with regular meetings; rather it would meet as needed to assure prompt and effective action (see page 39).

9 A much greater need exists for a broad based effort to integrate site workers and their families into the communities where they live. Churches, community organisations, school personnel, the Clare Social Service Council and ESB have a role to play in providing as many avenues as possible into local activities for both construction and permanent Moneypoint personnel (see pages 87–88).

10 It would be desirable to continue, or increase, efforts to expand the share of local farmers in rising food purchases in the impact area, particularly in liquid milk, fruit and vegetables. This assistance could include improved marketing, advice on production, grading, and quality, and perhaps organisation of delivery and outlets (see pages 78–79).

11 Our surveys indicate a definite preference for houses and flats by site workers. These can be supplied by using existing facilities throughout

the impact area and by new construction. The economic and social advantages of wider dispersion of workers appear to outweigh the costs of greater travel time (see pages 57 and 87–88).

12 In view of the inevitable difficulties of forecasting development over a ten-year period, we suggest that the Co. Council consider limited monitoring studies in 1983 or 1984 and at a later date as the plant approaches completion. Additional survey data on local attitudes, changes in social life, housing and effects on local labour markets and agriculture, etc., could be most helpful in achieving the best balance between local benefits and costs from the Moneypoint project (see page 92).

13 The project though generally favourable in its overall impact will result in additional economic and social costs not fully compensated for by ESB payments to the Co. Council or by other central government assistance. To compensate for these inconveniences we recommend that the station be valued for rateable purposes and that the state be asked to make a contribution in lieu of rates as it does for its own buildings (see page 97).

Chapter 8

RECOMMENDATIONS FOR OTHER LARGE PROJECTS

In drawing general lessons from the Moneypoint project it should be stated at the outset that we were very impressed by the awareness shown by Clare Co. Council and the ESB of the complex issues which could arise. This is evidenced by the foresight of the Co. Council in insisting that a major study be undertaken of the economic and social impact. We feel that the same degree of awareness and planning are necessary for other developments on the same scale. Of course, it would not be necessary for all planners to emulate the Clare Co. Council in commissioning the ESRI or some other research organisation to undertake such studies. In our opinion the Moneypoint study provides an introduction of the type of issues that need to be considered and it would not, in all cases, require a research team to replicate it. Indeed, it could in future be done by the staff of the Co. Council itself.

We discuss below the points which have general application for planners and operators of large projects. Most of these have been dealt with in the text with special application to Moneypoint; others have not because they were not within our terms of reference.

The Environment

All industries and enterprises, no matter where they locate, have both desirable and undesirable effects. Among the desirable ones are the incomes and employment they create in the area; while the undesirable ones are the environmental damage which they do. This damage takes the form of unpleasant or even dangerous chimney emissions, disfigurement or destruction of the landscape, production of toxic wastes, damage to roads, traffic congestion, crowding of resources, interference with a traditional way of life, etc.

Some of these effects can be very irksome to members of the local community, particularly to those who do not gain financially from the project, but who must, nevertheless, put up with the inconvenience caused. It is impossible to compensate people for some of those damages and it is for that reason that we very often have demonstrations and protests against the location of projects in certain areas.

The principle which must be applied in such cases is "the greatest good for the greatest number" and so if there are sufficient numbers looking for jobs in the area and it can be shown that the environmental effects are not too damaging, the protestors may (although not always will) be outvoted. But regardless of what the unemployment situation is, or how badly the incomes

are needed, there are certain environmental protection standards which must be laid down and enforced in all developed countries. Standards of these kinds are often quite expensive to introduce (e.g., sewage treatment plants, treatment and disposal of toxic wastes, prevention of undesirable chimney emissions, etc.) and the question always arises as to who should pay for the controls imposed. In theory the organisation causing the damage should pay, on the principle that "the polluter pays". In practice this does not always happen. Much depends on the nature of the industry or enterprise involved and on the location.

Industries locating in rural areas might for convenience be divided into two classes: (1) those which are anxious to locate at a particular site because the site has advantages for them, and (2) those which are probably indifferent about the location but are being strongly canvassed to locate there. Among the first class are oil, gas and mineral exploration companies who may have to compete for the site against strong international competition; there are also firms which may wish to locate because of a good harbour or other such facilities and there are "dirty industries" which may have difficulty in finding sites anywhere. Firms in these groups can be bargained into accepting fairly stringent regulations regarding environmental pollution or effluent disposal and can also be got to pay substantial sums for the use of local resources such as road, water, etc.

Members of the second group are in a different bargaining position. If they are "clean" industries manufacturing a saleable product they are probably being sought after widely and will probably demand considerable subventions in exchange for locating in an isolated area. Among the subventions usually sought are capital grants and tax remission on profits. The extent to which firms of this kind will pay for environmental protection is limited, and if rigid controls are imposed, the hosting authority will probably have to pay most of the cost.

The distribution of this cost within the host country is another matter. Because the local people must take the brunt of the inconvenience, without, in many cases, obtaining counterbalancing rewards, the cost of the pollution control should not fall entirely on them. It should be mainly a national charge to which workers in the industry contribute through their income and other taxes. Since the abolition of rates on private houses and on the smaller farms, this point is now of academic interest to a great extent. Nevertheless, it should be kept in mind in case local rates are re-introduced widely in future years.

The two groups defined above are, of course, the extremes of what is usually a continuous distribution, with a fairly grey area in the centre. In the latter area we have firms which may be fairly "dirty" but, nevertheless, are sought after, and locations in which even "dirty" firms are not too anxious to locate.

In these cases also the decision as to who pays for pollution control is normally based on a bargain, with the balance weighed in favour of the side with the most "clout". The important thing for society, however, is that the pollution be kept within reasonable bounds, regardless of who pays. Waterways must not be allowed to become sewers, the landscape must not be despoiled and the air must be kept reasonably clean.

We are happy to say that strict regulations in this regard were laid down for the Moneypoint project (see Planning Document in Appendix III). These standards have been examined by An Foras Forbartha and we are confident therefore that adequate precautions have been taken within the limits of current knowledge.

Accommodation for Construction Workers

We have shown in Chapter 6 that no great difficulty is anticipated in accommodating the outside construction workers on the Moneypoint project. The numbers expected to be employed are not large enough to create any insuperable problems. We expect that they can be housed in the local towns and our information is that the people in these places will be glad to make accommodation available.

For larger projects, however, in remote areas the housing problems may be more difficult. There is evidence from the USA of families living in mobile homes and caravans under most unhygenic conditions. Work camps were and are being used in connection with several projects in Scotland, and the ESB itself has used such camps in the past. The feedback coming to us from the organisers of large projects is that caravans and mobile homes for workers' families should not be allowed, while work camps should be used only as a last resort operation. The latter are difficult to organise; workers in them become restless and it is difficult to prevent outbreaks of fighting among workers and between workers and outsiders. It is much better to locate the workers in surrounding towns and give them an allowance for travelling to work in their own cars. As stated in Chapter 6, the busing of workers is too inflexible and costly. The experience with busing elsewhere is that most of the time the vehicles are only partly filled, the workers preferring to make their own arrangements. If, of course, petrol becomes very expensive the outlook may change but until that happens or workers demand a change, it is best to let them organise their own transport.

If outside workers are to be accommodated in local towns a mechanism is needed to arrange for suitable housing and for incorporating their families into the local environment. This is best arranged by local parish and other councils, with the co-operation of the company organising the construction. These councils can also be useful in preventing friction between outside

workers and local people. Also, as stated above in connection with Moneypoint, the local authority concerned should set up a monitoring committee, composed of influential people, to deal quickly with any unanticipated problems which may arise.

Housing of Permanent Industrial Workers

The provision of houses for permanent industrial workers in rural areas is not a difficult undertaking. Organisations like the Rural Housing Organisation (RHO), the Co. Council and private builders can, between them, cope with the problems. The question is where should the houses be located.

Every large project should be preceded by a resource inventory of the settlement services available in its travel to work area. Following this inventory, systematic decisions should be taken about the location of housing developments. These decisions should aim to exploit , to the maximum extent possible, existing town and village resources. Unless there is already a large town in the area, workers' houses should, if possible, be located in surrounding towns and villages. In these places they can avail of the existing facilities such as sewers, water mains, telephones, post offices, schools, churches, Garda Stations, etc., and can thus save considerable public expenditure. Also, if there is a recession, no whole community is threatened with extinction. Carrying this point a step further we suggest that large constructions or factories should, if possible, be sited convenient to a fairly large-sized town. This will already have its own infrastructural and social facilities which the new inhabitants can use without much extra expense. Also an existing town develops its own momentum and it can build up other industries fairly easily.

Planning for Future Industrial Employment

Once a large construction takes place in a rural area local people become accustomed to industrial work. As the construction work is phased out many of these become unemployed. Some will move to similar jobs elsewhere but others who have houses and families in the area will prefer to remain and draw unemployment benefits if other suitable work is not available. Planning should, therefore, commence at an early stage to offset the decline in construction employment. If the construction is for an enterprise which will give high employment when completed or will have local linkages, this planning will not be too difficult but if it is for a power station or some other such operation which gives relatively low employment and has few local linkages, then a high powered planning operation will be needed. It is vital that this aspect be realised by Co. Development teams, otherwise they can finish up with a very messy situation. In areas, therefore, where large constructions are taking place the Co. Development Officer should keep in close touch with

AnCO and the IDA, with a view to the provision of training programmes and to the establishment of other industries for both sexes. People will not be content in employment in an area unless there are members of the opposite sex employed there too.

Information Services

In carrying out the Moneypoint study we were fortunate in having available in Clare a large number of organisations vitally concerned with economic and social developments in the county. Few counties in Ireland are so well endowed in this regard. These organisations were utilised to the maximum extent, both through their representation on the Steering Committee and in various other ways; many of the recommendations in the Report emanated from ideas put forward by these bodies and a number have already been put into operation by these groups. Probably the greatest value of the study has been the two way flow of information which took place between the research team and the local organisations.

As a general rule therefore, for all large projects, we would recommend the establishment at the very outset of a proper information service. A mechanism should be devised to make all the relevant agencies aware of the dimensions of the project, of the problems which are likely to arise and of the steps which should be taken to circumvent or solve these problems. Many regions will not be as fortunate as Clare in having sufficient agencies to cover all the problem areas. In these regions, therefore, the necessary agencies should be established.

We would recommend a procedure somewhat as follows: The planning agency, whether or not it decides to carry out a formal study, should set up a Monitoring Committee, on the lines of the Moneypoint Study Steering Committee, composed of representatives of all the relevant agencies in the area and of concerned individuals. This Committee should discuss the problems which are likely to arise and appoint individual members to take charge of certain areas in which they have competence. Among these should be an engineer or biologist to monitor in a general way the environmental problems which are bound to arise and which may not be covered by the planning regulations (we expect that the planning authority would already have appointed a special team to monitor the latter). The appointed individuals would be expected to set up local committees to aid them in their work and report to them on any problems which occur. In this way difficulties and conflicts can be dealt with as they arise and potential trouble diffused.

The setting up of this type of information service through local committees is one of the most important functions which a planning agency can perform. It will ensure that the local people know exactly what is going on, what the

project means to the area, how the construction workers and their families should be treated, and the kind of problems which can arise. In this way the planning process will work smoothly, and minor difficulties will be prevented from escalating.

BIBLIOGRAPHY

ASTON, R. J., D. J. A. BROWN and A. G. P. WILMER, 1976. "Heated Winter farms at Inland Power Stations", *Fish Farming International*, June.

ARCHIBALD, G. C., 1967. "Regional Multiplier Effects in the UK", *Oxford Economics Papers*.

BISH, ROBERT, JOHN D. WOLKEN and CANDIS L. BROWN, in co-operation with the Coastal Zone Management (OCZM), 1977. "The C.E.I.P. Model", *Institute of Urban Studies*, University of Maryland, USA.

BOURQUE, P. J., 1971. "An Input-Output Analysis of Economic Change in Washington State", Seattle: *University of Washington Business Review*, Washington.

BROWN, A. J., 1967. "The Green Paper on Development Areas" in *National Institute Economic Review*.

COPELAND, J. R., and BRENDAN M. WALSH, 1975. *Economic Aspects of Local Authority Expenditure and Finance*, Dublin: The Economic and Social Research Institute, Paper No. 84.

CHENERY, H. B., and P. G. CLARK, 1959. *Inter-Industry Economics*, New York: Wiley.

FINSTERBUSCH, KURT and C. P. WOLF (eds.), 1977. "Methodology of Social Impact Assessment", *Community Development Series 32*, Donedin: Hutchinson & Ross Inc., McGraw Hill Book Co.

GREIG, M.A., 1972. "The Economic Impact of the Highlands and Islands Development Board Investment in Fisheries", Inverness: *Highlands and Islands Development Board.*

MACKAY, G. A., 1978. "A Study of the Economic Impact of the Invergordon Aluminium Smelter", Aberdeen: *Highlands and Islands Development Board.*

MACKAY, G. A., 1979a. "Prospects for the Shetlands Economy", *North Sea Study, Occasional Papers No. 4*, University of Aberdeen, Department of Political Economy, February.

MACKAY, G. A., 1979b. "Prospects for the Moray Firth Sub-Region", *North Sea Study, Occasional Papers No. 6*, University of Aberdeen, Department of Political Economy, August.

MIERNYK, W. M., 1965. *The Elements of Input-Output Analysis*. New York: Random House.

O'CONNOR, R., and E. W. HENRY, 1975. *Input-Output Analysis and its Applications*, Griffin's Statistical Monographs and Courses No. 36. London and High Wycombe: Charles Griffin and Company Limited.

POWER STATION IMPACT RESEARCH TEAM, 1979. *Power Station Impact. The Socio-Economic Effects of Power Stations on their Localities*, P.S.I. Project Department of Town Planning, Oxford Polytechnic, Headington, Oxford.

SADLER, P., B. ARCHER, and C. OWEN, 1973. *Regional Income Multipliers*. Bangor.

SHIELDS, MARK A., 1974. "Social Impact Assessment: An Analytic Bibliography", Prepared for the Institute of Water Resources (Army), USA Distributed by the National Technical Information Service, US Department of Commerce.

SPHERE ENVIRONMENTAL CONSULTANTS LTD., 1973. "Impact Analysis: Oil Platform Construction at Loch Carron": Prepared for the Scottish Development Department, London: Sphere.

SUMMERS, GENE, F., SHARON D. EVANS, FRANK CLEMENTE, E. M. BEEKE, and JAN MINKOFF, 1976. *Industrial Invasion of Non-Metropolitan America: A Quarter Century Experience*, New York: Praeger Publishers Inc.

THE PLANNING EXCHANGE, 1978. "The Social Impact of Large Scale Industrial Developments: A Literature Review", Glasgow: March.

VARWELL, ADRIAN. "The Social Impact of Large Scale Industry: A Study of the British Aluminium Plant at Invergordon". Unpublished. Available from the Highlands and Islands Development Board, Bank Street, Inverness, 1U1 1QR, Scotland.

Appendix I

LIST OF MEMBERS OF STEERING COMMITTEE

Mr J. K. Vaughan, Clare Co. Development Officer – Chairman

Rev. H. Bohan, Chairman, Rural Housing Organisation

Mr B. Callanan, Economic Planning Manager, Shannon Development

Mr S. Duggan, Killimer Parish Council

Rev. B. Geoghegan, Director, Clare Social Service Council

Mr J. P. Loftus, Regional Officer, IDA, Limerick

Mr. J. Lynch, Senior Staff Officer – Housing Administration, Clare Co. Council – Acting Secretary for most of period

Mr C. O'Dowd, ESB, Site Manager, Moneypoint

Mr C. F. O'Sullivan, Acting Co. Engineer, Clare Co. Council

Mr F. Ó Tuama, Civil Works Department, ESB

Mr C. Quinn, Generation Department, ESB

Rev. P. Sexton, C.C., Kilrush

Mr M. Harvey, Clare Co. Executive, Irish Farmers' Association

Mr G. Glennon, Clare Co Development team was co-opted towards the end of the study period to act as Secretary in succession to Mr J. Lynch who had to give up this duty due to pressure of other work.

Appendix II

SOCIO-ECONOMIC IMPACT OF MONEYPOINT POWER STATION, CO. CLARE

Terms of Reference

1 Description of Region: Brief description of project, what ESB propose doing, time span of different work, estimated workers employed at different times, together with more detailed description of location, i.e., area which will be affected by scheme. Type of countryside and land structure, present population and occupations. Economic activity in region, i.e., farming, manufacturing, construction, services, distribution, etc.

2 More detailed description of project: Type of construction, raw materials required, sources of raw materials. How transported to site? Labour force at different stages, skills required, e.g., engineers, administrators, electricians, carpenters, fitters, plumbers, plasterers, clerical, unskilled, etc. Likely sources of labour. Need for training of local labour. Age structures and conjugal conditions.

3 Social Conditions: Requirements of labour force for: (1) Housing (permanent, temporary, rented or lodgings), where located. (2) Shops of various kinds and location. (3) Schools. (4) Churches. (5) Recreation. Wage bill at different periods and estimates of how and when it will be spent. Infrastructural requirements and costs of these, i.e., new roads, telephones, telephone exchange, offices, storage, catering, transport, contract personnel, total servicing.

4 Subsidiary employment: This can be created via the increased consumption of existing workers who have received increases in wages and salaries and through the added consumption of new employees and their families, i.e., employment in the erection of houses, other buildings, factory sites, roads, schools, shops, police, etc. to cater for the increased workers. Employment in spin-off industries as a result of the expansion in the area. It is envisaged that in order to have diversified industry in the region, IDA and local development associations will strive to establish other industries in the region, particularly to cater for workers made redundant as various phases of construction work are completed.
Traditional extra employment through investment, decisions that are made on the strength of a general feeling of euphoria and optimism because the area is set for expansion.

5 Income impacts: In addition to ESB wages and salary payments there will be payments by local and central authorities for infrastructure, together with various state and EEC grants. These payments will be enlarged by suitable multipliers to estimate the overall impact on the region of the power station.
6 Land use impacts. A brief survey will be made of the current farming situation in the area and an assessment made of the changes which are likely to come about as a result of the increased population in the region, i.e., increases in vegetable growing, liquid milk production, etc.
7 General conclusions: The effect of the construction on incomes, employment and living conditions in the area will be appraised, and recommendations will be made regarding subsidiary industries to employ redundant construction workers.
8 Advantages of strengthening existing settlements rather than scattered rural development.
9 Undesirability of undue concentration of employees in one area.
10 Recommendations for other large projects.

Appendix III

INPUT-OUTPUT MODEL FOR CLARE[10]

In this appendix we explain how the Clare input-output model was prepared, paying most attention to the data sources and the interpretation of the results. The structure of the system and the calculations involved in obtaining income and employment multipliers from it are not dealt with in any detail . This information is available from various text books on the topic (see for example, Chenery and Clark, 1959; Miernyk, 1965; and O'Connor and Henry, 1975).

Labour Force Estimates

We commenced by preparing estimates of the total labour force in Clare in 1979 based on the Census of Population for that year. These estimates are given in Tables 3.5 to 3.7. We next distributed the labour force to the different industries on the basis of information from the Co. Council, the Co. Development Officer, the Economic Planning Manager of Shannon Free Airport Development Company and various government departments whose officials were employed in Clare, i.e., teachers, gardai, customs and excise officers, etc. The numbers employed in wholesale and retail distribution were estimated using ratios for Clare from the 1971 Census of Population. These employment figures, and income estimates from various sources, provided a rough estimate of total income in the county for 1979 which served as a check on estimates built up from individual industries and businesses.

Agricultural Output and Incomes

Having established the employment figures we then proceeded to make estimates of agricultural output and income in the county. These estimates were based on the agricultural statistics collected by the Central Statistics Office and on data supplied by the Department of Agriculture and officers of the Clare Co. Committee of Agriculture. The results were compared with data from the Farm Management Survey of An Foras Talúntais and were found to agree closely.

Figures for the disposal of the agricultural output as between consumption in Clare and exports were obtained from the officers of the Clare Co. Committee of Agriculture, as were data for imports of livestock, livestock

[10]The transactions table for this model was prepared by Professor E. W. Henry of The Economic and Social Research Institute.

products, fruit and vegetables and inputs such as feed, seed, fertilisers, etc. A summary of the agricultural output and input figures is given in Table III.A.

Table III.A. *Value of agricultural output, inputs and income for Clare, 1979*

Enterprise	*Value*
	IR£'000
Output	
Cattle	29,670
Pigs	1,529
Sheep and poultry	1,140
Livestock products	18,124
Crops and other income	4,506*
Total Output	54,969
Inputs	
Feed, seeds and fertilisers	8,100
Other costs	12,500
Total Inputs	20,600
Income arising	34,369

*Includes EEC headage payments and other non-capital grants.

Household Expenditure

Household expenditure in Clare for 1979 was estimated from the 1973 and 1978 Household Budget Inquiries (HBI) published by the Central Statistics Office. The 1973 HBI gave figures for spending in urban and rural households. These were converted to rural/urban expenditure ratios per person and the ratios applied to the 1978 urban figures to give national rural expenditure per person. The urban and derived rural figures were then applied to the 1979 Clare urban and rural populations to give expenditure on the various items in the county at 1978 prices. Expenditure at 1979 prices was obtained from these by application to them of the available consumer price indices for the different items. The following expenditure figures for Clare in 1979 were obtained from the exercise.

Item	*IR£ million*
Food	36.1
Drink and tobacco	9.4
Clothing and footwear	11.3
Fuel and light	7.0
Housing	6.6
Household durables and non-durables	7.4
Transport	16.3
Services	16.0
Miscellaneous	3.9
Total	114.0

Income

Income in the county was estimated from a number of sources. Figures for sales, purchases and wages of industrial firms were obtained from a special survey. The short questionnaire shown at the end of this appendix was drawn up to elicit this information. The sample for the survey was drawn from lists of firms supplied by the Clare Co. Development Officer and from officers of Shannon Free Airport Development Company. These officers have lists of all industrial firms in the county, the type of products manufactured and the numbers employed. The lists comprised 257 firms, 168 of which had fewer than 20 employees while the remaining 89 had 20 employees or more. It was decided to sample *all* the firms with 20 or more employees and half of the smaller firms. The sample was selected systematically from lists ordered by district and type of industry, thus ensuring that the sample was representative by reference to these characteristics.

The initial approach to each firm was by post. Non-respondents were followed up by telephone and, if a response still could not be obtained, one of the Institute's interviewing staff called on the firm.

Out of the original sample of 173 firms, 119 completed returns were obtained, of these 70 were from 89 large firms and the remaining 49 were from the small firms. Five firms refused to co-operate, eight had closed since the list was compiled, five listed firms did not engage in manufacturing and the remaining 37 did not respond despite repeated requests. Of the firms not responding, 12 were large firms and 24 were small ones. Two of the refusals were large firms. Considering that 70 out of 89 large firms co-operated we are satisfied that the results are fairly reliable.

The data obtained from the survey were grossed up using the employment figures and as a result we obtained county figures for the value of industrial sales and purchases, the sources of these purchases, whether within or outside

Clare, the destination of sales and the value of wages paid. These figures were classified by type of industry.

Incomes of local and central authority workers in Clare, i.e., gardai, teachers, post office employees, Co. Council staff, Aer Lingus personnel, etc., were obtained from state and semi-state bodies and from the Co. Council and its subsidiary bodies. The remaining incomes and profits in the county were estimated by multiplying up the numbers employed by average earnings obtained from various sources, particularly from the 1978 Household Budget Inquiry, adjusted for subsequent wage increases.

When incomes and profits from the various sources were aggregated the total disposable income came to IR£140.6 million compared with total expenditure of IR£114.0 million. Savings, therefore, worked out at IR£26.6 million or 18.9 per cent of disposable income. This saving/income ratio compares with a figure of 23.4 per cent for national personal savings as a proportion of national disposable income in 1978.

The Input-Output Tables

Having estimated the various income and expenditure figures and the flows both inside and outside the county we prepared a 13 x 13 inter-industry transactions table for 1979. This is the basic table of the input-output system which shows the flows of goods and services within the region as well as imports and exports to and from the area. The rows of the table give the sales of each sector to other sectors and to final demand (i.e., to household consumption, government consumption, capital formation and exports). The columns of the table show the purchases of each sector from other sectors and from imports; they also show the income arising in each sector as well as the transport and trade margins. For technical reasons the values of the various transactions are usually given at producers' prices, hence provision must be made in the table for a distribution or trade margin sector.

Normally in the construction of a transactions table the household sector is not included in the inter-industry section. Household expenditure is put into a column of final demand and household income is included as a row in the primary input section of the table. When this method of construction is adopted, household expenditure is automatically treated as a leakage from the system rather than a generator of further economic activity within it and income multipliers obtained from such a table are therefore understated (see O'Connor and Henry, 1975, pp 41–53). If, however, the purpose of the exercise is to derive full income multipliers, households must be included in the inter-industry section. To do this household expenditure and savings are brought into the matrix as a column and household income as a cor-

Table III.B: *Input-Output model for Clare, 1979 – table of technical coefficients*

Inputs	*Agriculture forestry, fishing* (1)	*Sand, stone, gravel* (2)	*Food, drink, tobacco* (3)	*Textiles, clothing and footwear* (4)	*Wood, furniture, paper, print* (5)	*Chemicals, clay products* (6)	*Metals and engineering* (7)	*Construction* (8)	*Electricity and gas* (9)	*Trade margins* (10)	*Transport* (11)	*Services* (12)	*Household consumption and saving* (13)
(1) Agriculture, forestry, fishing	0.0	0.0	0.04302	0.0	0.0	0.0	0.0	0.0	0.00488	0.0	0.0	0.00204	0.04734
(2) Sand, stone, gravel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01796	0.0	0.0	0.0	0.0	0.00071
(3) Food, drink, tobacco	0.00782	0.0	0.01136	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00316	0.23067
(4) Textiles, clothing, footwear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00112	0.08018
(5) Wood, furniture, paper, print	0.0	0.0	0.0	0.0	0.00243	0.0	0.0	0.01050	0.0	0.0	0.0	0.0	0.03733
(6) Chemicals, clay products	0.0	0.07368	0.0	0.0	0.0	0.00028	0.0	0.07185	0.0	0.0	0.0	0.00427	0.00142
(7) Metals and engineering	0.0	0.0	0.0	0.0	0.0	0.00007	0.0	0.0	0.0	0.0	0.0	0.0	0.00213
(8) Construction	0.02551	0.0	0.0	0.0	0.0	0.0	0.00071	0.10780	0.0	0.0	0.0	0.01394	0.00818
(9) Electricity and gas	0.0	0.03790	0.00019	0.00026	0.0	0.0	0.00007	0.0	0.0	0.01639	0.0	0.00632	0.04276
(10) Trade margins	0.00621	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.09727
(11 Transport	0.0	0.0	0.0	0.00052	0.0	0.00586	0.00113	0.0	0.0	0.0	0.0	0.0	0.06399
(12) Services	0.0	0.0	0.0	0.00157	0.0	0.00733	0.00001	0.01399	0.0	0.12299	0.0	0.08640	0.12539
(13) Household income in Clare	0.59012	0.21263	0.02308	0.10753	0.10584	0.09152	0.17403	0.26721	0.06716	0.43929	0.36483	0.54534	0.0
Total intermediate inputs	0.62966	0.32421	0.07765	0.10988	0.10827	0.10506	0.17595	0.48931	0.07204	0.57867	0.36483	0.66259	0.73692
(14) Imports	0.20712	0.14105	0.86697	0.67706	0.68420	0.33142	0.55277	0.33400	0.82825	0.04427	0.41094	0.03605	0.07391
(15) Other primary inputs	0.16322	0.53474	0.05538	0.21306	0.20753	0.56352	0.27128	0.17669	0.09971	0.37706	0.22423	0.30136	0.18914
Total inputs	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Number of workers per IR£1,000 output	0.1705	0.0682	0.0087	0.0426	0.0374	0.0245	0.0508	0.0607	0.0278	0.1090	0.0762	0.1289	0.0

Table III.C: *Input-output model for Clare, 1979 – table of interdependence coefficients*

Sector	*Agriculture forestry, fishing* (1)	*Sand, stone, gravel* (2)	*Food, drink, tobacco* (3)	*Textiles, clothing and footwear* (4)	*Wood, furniture, paper, print* (5)	*Chemicals, clay products* (6)	*Metals and engineering* (7)	*Construction* (8)	*Electricity and gas* (9)	*Trade margins* (10)	*Transport* (11)	*Services* (12)	*Household consumption and saving* (13)
(1) Agriculture, forestry, fishing	1.04439	0.01649	0.04715	0.00796	0.00776	0.00720	0.01278	0.02365	0.01001	0.03805	0.02670	0.04665	0.07317
(2) Sand, stone, gravel	0.00123	1.00026	0.00008	0.00013	0.00013	0.00012	0.00022	0.02052	0.00009	0.00065	0.00044	0.00103	0.00120
(3) Food, drink tobacco	0.18598	0.06853	1.02649	0.03216	0.03139	0.02905	0.05168	0.09549	0.02078	0.15272	0.10792	0.18232	0.29582
(4) Textiles, clothing, footwear	0.06108	0.02258	0.00503	1.01103	0.01077	0.00997	0.01772	0.03275	0.00711	0.05238	0.03701	0.06255	0.10146
(5) Wood, furniture, paper, print	0.02885	0.01055	0.00236	0.00516	1.00747	0.00466	0.00829	0.02710	0.00333	0.02444	0.01730	0.02885	0.04743
(6) Chemicals, clay products	0.00445	0.07458	0.00028	0.00043	0.00041	1.00070	0.00074	0.08339	0.00028	0.00274	0.00142	0.00829	0.00390
(7) Metals and engineering	0.00162	0.00061	0.00013	0.00029	0.00029	0.00033	1.00047	0.00088	0.00019	0.00139	0.00098	0.00163	0.00270
(8) Construction	0.03864	0.00372	0.00207	0.00184	0.00177	0.00176	0.00370	1.26470	0.00131	0.01068	0.00607	0.02723	0.01664
(9) Electricity and gas	0.03465	0.05066	0.00304	0.00651	0.00609	0.00568	0.01009	0.01938	1.00402	0.04676	0.02092	0.04160	0.05735
(10) Trade margins	0.08042	0.02743	0.00638	0.01340	0.01308	0.01210	0.02154	0.03977	0.00867	1.06347	0.04498	0.07453	0.12385
(11) Transport	0.04870	0.01843	0.00401	0.00932	0.00858	0.01380	0.01526	0.02658	0.00567	0.04164	1.02951	0.04893	0.08089
(12) Services	0.11588	0.04295	0.00949	0.02241	0.02020	0.02670	0.03328	0.07924	0.01335	0.23266	0.06945	1.20995	0.19037
(13) Household income in Clare	0.76012	0.28100	0.06257	0.13725	0.13398	0.12391	0.22060	0.04738	0.08852	0.65006	0.46070	0.76327	1.26280
Total Primary Requirements for IR£1 Final Demand													
(14) Imports	0.56672	0.32344	0.91500	0.73928	0.74609	0.39009	0.65275	0.59735	0.86914	0.35716	0.61804	0.40059	0.56768
(15) Other primary inputs	0.43328	0.67656	0.08500	0.26072	0.25391	0.60991	0.34725	0.40265	0.13086	0.64284	0.38196	0.59941	0.43232
Total primary	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Number of workers required per IR£1,000 final demand	0.21433	0.08134	0.01975	0.05027	0.04473	0.03270	0.06284	0.09613	0.03344	0.16214	0.10106	0.18430	0.06820

responding row. This has been done in preparing the Clare table so that one of the 13 inter-industry sectors is for households.

One other point should be mentioned in connection with the transactions table. In regional impact studies of this kind it is usual to include a separate sector in the inter-industry section of the table for the project under investigation. Thus, Mackay (1978) put in a separate row and column for the Invergordon smelter and other writers have used a similar methodology. In these cases, however, the studies were made after the completion of the project when firm figures were available for the various expenditures and the interdependencies had worked through the system. In this case, where the model was constructed at the beginning of the programme we did not have sufficient data to derive a separate row and column for the total Moneypoint operation, particularly for the expenditures on materials and infrastructural facilities. Also because these purchases have not yet taken place their linkages with other sectors cannot be determined with any acceptable degree of accuracy. Accordingly we completed the initial transactions table for conditions obtaining at present, but in later models we included a sector for the income and expenditure of the Moneypoint construction workers.

For reasons of confidentiality it has not been possible to show the Clare transactions table in this Report. Some of the sectors were dominated by a few very large firms which could easily be identified. The table of technical coefficients (Table III.B),however,gives a clear picture of the structure of the table and of the intermediate and primary input sectors included. In addition to these the transactions table had three columns, one each for exports, government expenditure and other final demand. The technical coefficients were obtained by dividing every element in each column of the transactions table by that column's total. Thus for agriculture, forestry and fishing the technical coefficient of .590 for household income was obtained by dividing the household income of the sector (IR£34.7 million) by the total output of the sector (IR£58.8 million). This is the highest income coefficient in the table. The coefficient for agricultural imports (i.e., feed, seed, fertiliser and live animals) on the other hand, is relatively low (only 0.21) showing that agriculture has a very low import content as also has sand, stone and gravel. Sectors with very high import contents are food (processed), drink and tobacco (0.87), textiles, etc., (0.68), wood, furniture, etc., (0.68) and electricity and gas (0.83).

A feature of Table III.B peculiar to all such regional tables is the large number of zero entries in the matrix. This indicates weak linkages between the different producing sectors which, taken in conjunction with the large number of high import coefficients, indicates very low induced income within the county from additional spending.

The interdependence or total coefficients are given in Table III.C. The entries in the household income row of this table are the sectoral multipliers. These indicate the extra household income generated within the county as a result of an increase of IR£1 in the final demand for the products of each sector. Thus an increase of IR£1 in the demand for agricultural products generates an increase of IR£0.760 in household income in Clare, not all necessarily in agriculture. Some of this income will go to butchers, greengrocers, milk roundsmen, distributors of various kinds, etc. At the other end of the spectrum a IR£1 increase in final demand for food, drink and tobacco generates income in Clare to the extent of only IR£0.06. The highest multiplier of 1.26 is that in the household expenditure column itself. This shows that for every IR£1 of income received by households in Clare IR£1.26 is generated, i.e., the IR£1 which is already household income and an extra IR£0.26 generated by the expenditure within Clare of some of this income.

This multiplier would also apply to the incomes of the permanent station staff and to the local construction workers since these would be expected to have similar spending habits to ordinary Clare residents. It would not apply, however, to the incomes of the construction workers from outside Clare. These spend a much higher proportion of their incomes outside the county than Clare residents and their average income multiplier is, therefore, lower than 1.26. We included a sector in the input-output table for the income and expenditure of the outside construction workers and found that the multiplier on this sector was only 1.18. This means that every IR£ take-home income by these workers generates extra disposable income in Clare of IR£0.18.

When we weighted together the incomes of all the construction workers and included them as a sector in the input-output table we obtained a multiplier of 1.21. We can, therefore, identify two income multipliers for the Moneypoint workers, the first with a magnitude of 1.26 which can be applied to the incomes of permanent station staff and the second of 1.21 which applies to all construction workers. The latter multiplier will, of course, change if the proportion of outside to local workers in the labour force changes from what it was in mid-1980.

Expenditure by the ESB, Co. Council and other contractors on materials and construction in Clare will, of course, yield much lower income multipliers than those for household incomes. Much of this expenditure will go for imported materials such as oil, machinery and parts, cement, bitumen, etc. As an example, the multiplier in the household income row of the construction column shows that an extra IR£1 spent on construction in Clare generates household income in the county of only IR£0.407.

The bottom part of Table III.C shows the total primary input requirements per IR£1 final demand and the number of workers required each year per

Table III.D: *Summary of technical and interdependence (total) coefficients for income employment and imports in Clare in 1979*

	Technical coefficients			*Interdependence coefficients*		
Sector	*Household income*	*Imports*	*Number of workers per IR£1,000 output*	*Household income*	*Imports*	*Number of workers required per IR£1,000 final demand*
(1) Agriculture, forestry, fishing	0.590	0.207	0.170	0.760	0.567	0.214
(2) Sand, stone, gravel	0.213	0.141	0.063	0.281	0.323	0.081
(3) Food, drink and tobacco	0.023	0.867	0.009	0.063	0.915	0.020
(4) Textiles, clothing, footwear	0.108	0.677	0.043	0.137	0.739	0.050
(5) Wood, furniture, paper, print	0.106	0.684	0.037	0.134	0.746	0.045
(6) Chemicals, clay products	0.092	0.331	0.025	0.124	0.390	0.033
(7) Metals and engineering	0.174	0.553	0.051	0.221	0.653	0.063
(8) Construction	0.267	0.334	0.061	0.407	0.597	0.096
(9) Electricity and gas	0.067	0.828	0.028	0.089	0.869	0.033
(10) Trade margins	0.439	0.044	0.109	0.650	0.357	0.162
(11) Transport	0.365	0.411	0.076	0.461	0.618	0.101
(12) Services	0.545	0.036	0.129	0.763	0.401	0.184
(13) Household income (all Clare workers)	0.0	0.074	0.0	1.263	0.568	0.068
(14) Household income (Moneypoint construction staff)	0.0	0.210	0.0	1.207	0.598	0.050

IR£1,000 final demand in that year. Those figures show that agriculture, though having a direct import coefficient of only 0.21 has a total import requirement of 0.57 per IR£1 final demand. The sector with the lowest total import requirement is the sand, stone and gravel sector (0.323). The sector with the highest total import requirement is food, drink and tobacco (0.915).

The sector with the highest total number of workers per IR£1,000 final demand is agriculture (0.21), while food, drink and tobacco has the lowest (0.02). A summary of the direct and induced income, employment and import coefficients is given in Table III.D (i.e., technical and interdependence coefficients).

Conclusions

Because of the inevitable margins of error in the basic data and the technological changes which will take place over time, the application of the results must be taken with a certain amount of caution. This is especially true of the individual sectoral figures. Despite these warnings, however, we should add that unless something very drastic occurs, multipliers tend to remain fairly stable over time, particularly in regional models. Imports usually remain high and the coefficient changes which occur tend to cancel each other out. For this reason we feel that the multipliers obtained are likely to remain fairly stable over most of the Moneypoint construction phase. Some obvious changes to correct for price inflation will be necessary, e.g., to obtain employment per IR£1,000 final demand in 1985, the 1985 values would need to be converted to 1979 prices.

We should also mention, for the benefit of researchers in this area, the estimated cost of preparing the model, emphasising of course, that the work could be done relatively cheaply because we were engaged in collecting other similar type data for the main study. The cost of collecting the data for the input-output model in Clare and from government Departments in Dublin, typing of questionnaires and letters, payment for telephone calls, postage and the travelling expenses of interviewers worked out at IR£625. The data processing costs, i.e., checking returns, coding and punching cards were about IR£360, giving a total for data collection and processing of about IR£1,000. Research workers' time spent in preparing questionnaires and completing the input-output table has been estimated at IR£3,000, giving a total cost of IR£4,000 for preparing the input-output model. It could be argued that the cost of the research workers' time was an overhead which would have to be incurred in any case but one could also take it as an opportunity cost; if the research workers were not engaged on this work they could be employed on something else. It should also be emphasised that the costs were much less than would have been incurred if we were not already working

on the main study in Clare. We were able to fit in interviews with Co. Council and other officials, agricultural advisers, teachers, business people, clergymen, social workers, etc., when we were in Clare for meetings of the Steering Committee and on other business.

MONEYPOINT INDUSTRIAL SURVEY

QUESTIONNAIRE

Code No. | | | |

Sales, purchases, wages and other expenses by your firm for

year ending _____ (Give latest year available, preferably 1979)

(1) Approximate Value of Sales

Main Items	Total Value IR£	Percentage of Total Sales	
		Within Clare	Outside Clare
Other			
Total all products			

(2) Approximate Value of Purchases of Goods and Services (including raw materials)

Main Items	Total Value IR£	Percentage of Total Purchases Bought from Firms and Persons	
		Within Clare	Outside Clare
1.			
2.			
3.			
4.			
Total all products			

(3) Wages and Related Expenses (not included above)

	Total Cost IR£	Percentage Paid to Persons	
		Within Clare	Outside Clare
Gross Wages and Salaries			

Amount of annual PAYE Payments: IR£_____

Amount of annual Social Welfare Contributions:

Employer..... IR£ _____

Employees ..... IR£ _____

Appendix IV

PLANNING PERMISSION DOCUMENT

CLARE COUNTY COUNCIL
LOCAL GOVERNMENT (PLANNING AND DEVELOPMENT) ACTS, 1963 AND 1976. NOTIFICATION OF A GRANT OF PERMISSION (SUBJECT TO CONDITIONS)

To: Electricity Supply Board,
Lower Fitzwilliam Street,
Dublin 2

Reference No. in Register
of Clare County Council
P8/13759

Application by Electricity Supply Board

of Lower Fitzwilliam Street, Dublin 2.

on 22nd December, 1978, for permission for the construction of a coal-fired electricity generating station and associated works on a site at Carrowdotia North, Carrowdotia South and Ballymacrinan, Killimer, in accordance with the plans and particulars submitted including the written submission received with the application.

A permission has been granted for the development described above subject to the following conditions: –

1.0 GENERAL

1.1 The fuel source shall be coal. In exceptional circumstances, e.g.; failure of a coal mill, the temporary utilisation of residual oil in combination with coal shall be permitted. The use of any other fuel source shall not be permitted except with approval under the Local Government (Planning and Development) Acts, 1963 and 1976, which shall be the subject of a separate planning application.

1.2 The capacity of the station shall not exceed 900 megawatts. Any increase in this capacity shall not be permitted, except with approval under the Local Government (Planning and Development) Acts, 1963 and 1976, which shall be the subject of a separate planning application.

1.3 No material alteration in the elevations of buildings or in heights of buildings or other installations or in external finishes or in the location

of the various buildings and installations on the site shall be made without the prior agreement in writing of the planning authority.

1.4 Before construction or erection commences on each section of the development, the developer shall submit to the planning authority for agreement such detailed drawings and/or specifications as the planning authority may require, including working drawings, elevations, sections, details of external finishes, colour schemes, constructional details, exits, fire points, effluent treatment works, water treatment works, lighting, fencing and roads, and shall not commence work on any section of the development without the prior agreement in writing of the planning authority.

1.5 Before the development commences, agreement shall be reached between the developer and the planning authority on the arrangements for the supply of water to the proposed development including agreement on the sum payable by the developer to the planning authority in respect of any works which may be necessary for the supply of water to the site.

1.6 The developer shall bear the cost of a study to be commissioned by the planning authority, in consultation with the developer, to assess and evaluate the sociological implications of the development for the area. The study shall be commissioned within six months from the date of commencement of the development.

1.7 The developer shall pay to the planning authority, not later than one year after the commencement of the development, the sum of IR£50,000.00 for expenditure by the planning authority, at its sole discretion on amenity and community facilities in, and for the benefit of the people of the ecclesiastical parish of Killimer.

1.8 Before the development commences, the developer shall submit to the planning authority evidence that a licence to use the foreshore has been issued, or will be issued by the Minister for Tourism and Transport under the Foreshore Act, 1933.

1.9 The developer shall permit access to the site, and to any structure or building on the site, at any time, by employees or agents of the planning authority duly authorised for this purpose by the planning authority.

1.10 No temporary dwellings or caravans used as dwellings shall be permitted on the site.

1.11 The complete site shall be treated in accordance with a landscape scheme and programme to be submitted to and agreed with the planning authority by the developer. The scheme and programme shall be submitted to the planning authority within 18 months after the com-

mencement of the development.

1.12 The station and chimneys shall be marked and lighted for the guidance and protection of aircraft in accordance with the requirements of the Minister for Tourism and Transport.

1.13 The outdoor switching station shall be enclosed by a 2.6 metre high unclimable fence.

1.14 During the construction period the developer shall provide sanitary arrangements to the standards required by the planning authority on the site.

1.15 The developer shall provide on the site: –

(a) temporary car parking accommodation for staff employed on construction work on the site.

(b) adequate car parking accommodation for visitors' and employees' cars.

1.16 The developer shall implement the recommendations contained in the Interim Report of An Foras Forbartha dated December, 1978, submitted with the planning application.

1.17 The developer shall provide on the site, before the development is completed, a marina or other public recreational facility to be agreed with the planning authority.

1.18 The premises shall comply with the provisions of:–

(a) The Factories Act, 1958, and the Regulations made thereunder,

(b) The Office Premises Act, 1958, and the Regulations made thereunder,

(c) The Food Hygiene Regulations, 1950, as amended,

(d) Alkali &c. Works Regulation Act, 1906,

(e) Dangerous Substances Act, 1972, and any Regulations made thereunder.

2.0 FIRE SAFETY

2.1 Fire protection of all buildings and plant on the site shall conform to the best international practice in fire safety design of electricity generation stations.

2.2 The following special precautions shall be taken in the protection of zones which could be affected by fire from sources of high fire risk, which zones include transformers, turbo-alternator plant, boiler burners, pumping and heating units, belting systems associated with rising conveyors and bunker tops: –

(a) Structural members in high risk zones shall be protected with intumescent or similar fire resistant coatings. The members to be

protected and the degree of protection to be provided shall be agreed with the planning authority before the work commences.

(b) Cable bridges and ducts shall be so constructed as to prevent the spread of fire from one plant item to another.

(c) The engine room shall be compartmentalised from the boiler house/bunker bay, and the bunker bay shall be compartmentalised from the boiler house at the upper level.

2.3 Landing valves and hose reels shall be provided throughout the station at points to be agreed with the planning authority. Hydrants shall be provided at all risk areas outside the main station buildings including: Berthing structure, coal yard and storage area, oil storage area, water treatment and deionisation plant.

2.4 The landing valves and hydrants shall be supplied by internal and external ring main systems pressurised by fire pumps, with standby capacity and capable of delivering 1,000 gallons per minute at 120 lbs. per square inch. Jockey pumps shall be provided to ensure that the ring mains are continuously pressurised.

2.5 At each landing valve adequate branch pipes or trolley mounted foam generating units with associated hose, shall be provided.

2.6 An adequate supply of foam making compound to cover normal fire risk shall be carried in the station. The quantities to be stored shall be agreed in the station. The quantities to be stored shall be agreed with the planning authority before the station is commissioned.

2.7 Sources of high fire risk together with the surrounding areas shall be protected by fire extinguishing systems purpose built to handle any fire incident which might occur within the zone of protection. Such systems shall have fire detectors which automatically actuate high pressure water spray nozzles and completely deluge the item of plant and the surrounding area. Particular plant to be protected shall include transformers, turbo-alternator plant, boiler burners, pumping and heating units.

2.8 All conveyors shall be protected by non-combustible housing, fire resisting belting and compartmentalisation into zones. Each zone shall be protected by a water spray deluge fire extinguishing system to a design to be agreed with the planning authority.

2.9 The fixed high-pressure water spray system required in the locations specified in condition 2.7 shall be pressurised by fire pumps, with standby capacity capable of delivering 5,000 gallons per minute at design pressure.

2.10 The proposed service reservoir of six million gallons capacity shall supply water for the fixed type pressure water spray systems required un-

der conditions 2.7 and 2.8 and for the hydrant/landing valve systems required under conditions 2.3 and 2.4.

2.11 A smoke and heat extraction system shall be incorporated in the roof of the station. Roof screens shall be provided which will confine the smoke generated to the zone of risk. Smoke and heat extraction systems shall also be incorporated into the control block where, at various levels, rooms containing relays, controls, computers, switches and cable runs are located. These rooms shall be separated by fire resistant compartment walls and floors having a fire resistance of at least two hours duration and all openings in these elements shall be fire stopped. Separate ventilation systems shall be provided, and these shall automatically switch to the smoke and heat extraction mode on the actuation of a smoke detection system.

2.12 Access to items such as boilers, turbines and associated plant shall be by catwalks, stairways and platforms with open grid and chequer plate flooring. Each area to which there is access shall be provided with alternative means of egress and these routes shall be signposted in accordance with regulations of the European Economic Communities.

2.13 Exits generally shall have a minimum clear width of 3′6″. Any area shall be capable of being evacuated in a maximum time of two and a half minutes.

2.14 Before construction or erection commences on each section of the plant a schedule giving details of flammable, explosive and toxic materials which may be stored or used on the site or in any building, shall be submitted to the planning authority.

2.15 During the construction period adequate fire fighting facilities shall be provided, including a pressurised watermain with hydrants, hoses and ancillary equipment.

2.16 The developer shall provide and maintain a self-sufficient fire fighting service on the site at all times and for this purpose shall provide and train the necessary personnel.

2.17 Adequate vehicular access shall be provided from the shore to the jetty and an adequate unobstructed escape route shall be maintained at all times.

2.18 The jetty shall be provided with an adequate fire alarm system to be agreed with the planning authority. Proper supervision shall be maintained during loading and off-loading and an adequate fire plan to prevent and deal with an outbreak of fire shall be adopted and put into action as necessary.

2.19 The developer shall comply with the provisions of the Tanker Terminal

Safety Guide issued by the International Maritime Consultative Committee.

3.0 ROAD TRAFFIC AND ROAD SAFETY

3.1 The developer shall arrange that all heavy vehicular traffic servicing the development and originating north of a line from Kildysart to Kilrush shall travel via the National Secondary Road, N 68, Ennis-Kilrush and via Kilrush Urban road No. 7 (i.e. Inner Monvana Road), Wood Road to Grace Street, Moore Street (part), Stewart Street and to Killimer via National Secondary Road, N 67, and that return traffic shall use the same route.

3.2 The developer shall arrange that construction traffic crossing the National Secondary Road shall do so at locations to be agreed with the planning authority and shall arrange that all such traffic shall be guided by flagmen and that all crossings shall be carried out during daylight hours.

3.3 The developer shall pay to the planning authority the sum of IR£36,000 within one month of the commencement of the development and further sums of IR£26,000 per year on the 1st July of each of the six years 1980 to 1985, inclusive, in respect of road improvements, and road maintenance, which work will facilitate the development.

3.4 The developer shall, within three months of the commencement of the development, investigate the feasibility of bringing heavy items of equipment to the site by sea. The results of such investigation shall be made available to the planning authority.

3.5 The points of connection of the access roads within the site to the public roads, together with acceleration/deceleration lanes shall be agreed with the planning authority.

3.6 No development shall be carried out on the lands shown coloured red on the planning authority's drawing No. R517 dated 26th January, 1979. The new boundary fence line shall be set back accordingly.

4.0 WATER POLLUTION ABATEMENT

4.1 Existing water courses shall be adequately piped or diverted in a manner to be agreed with the planning authority. Adequate site drainage shall be provided at all stages of construction. Precautions shall be taken to minimise run-off of clayey/silty materials during the progress of the site development works.

4.2 Surface water run-off from roads and paved areas shall be discharged to the estuary by an adequate surface water drainage system.

4.3 Surface water from oil storage areas, station buildings and yards and from areas where small leaks or accidental spillage of oil may occur shall be discharged through drains with adequate oil interceptors of approved design.

4.4 Surface water from the coal storage area shall be passed through a granular medium to a separate drainage system. A monitoring tank shall be constructed on this system before discharge to the estuary. The pH value of the discharge shall be maintained in the range of 6 to 9. A monitoring programme shall be submitted to and agreed with the planning authority.

4.5 The run-off from the Ash Disposal Area shall be passed through a settling area before discharge to the estuary. A monitoring chamber shall be provided. The pH value of the discharge shall be maintained in the range of 6 to 9. The suspended solids count of the estuary water used in the process shall not be increased by more than 100 parts per million. A monitoring programme shall be submitted to and agreed with the planning authority.

4.6 The final design and location of the intake and outlet of the Cooling Water System shall be agreed with the planning authority on the completion of a special study undertaken for the developers by the Wallingford Research Laboratory, a copy of which shall be made available to the planning authority.

4.7 Fish screens shall be provided at the intake and outlet chambers of the cooling water system of a type to be agreed with the planning authority and the Minister for Fisheries and Forestry.

4.8 The maximum rise in temperature of the cooling water over ambient temperature shall not be greater than 12 degrees centigrade.

4.9 The temperature of the water in the estuary resulting from the discharge of cooling water shall not be increased by more than 0.5 degrees centigrade above ambient estuary temperature measured at points outside the thermal discharge mixing zone. The cooling water shall not be discharged to the estuary at a temperature exceeding 29 degrees centigrade.

4.10 Residual chlorine in the cooling water shall not be greater than 0.5 parts per million.

4.11 Domestic sewage from the development shall be treated to the following standards before discharge to the estuary :–

The biochemical oxygen demand shall not exceed 20 milligrammes per litre and the suspended solids shall not exceed 30 milligrammes per litre.

Detailed plans of the treatment plant shall be submitted to and agreed with the planning authority.

4.12 Digested sludge from the domestic sewage treatment plant shall be disposed of in a manner and to a site to be agreed with the planning authority.

4.13 Effluent from the deionisation plant for treating the boiler feed water shall be treated if necessary to bring its pH value within the range of 6 to 9 before being discharged to the estuary.

4.14 Sludge from the Water Pretreatment Plant shall be removed to the ash disposal area.

4.15 Every possible precaution, including training of the necessary personnel, shall be taken during the unloading of oil to avoid spillage. Modern unloading equipment shall be used and properly maintained.

4.16 The oil storage tanks and drum storage areas shall be contained in a bunded compound designed and constructed to the satisfaction of the planning authority and of sufficient capacity to contain a total spillage plus 10%. The storage tanks shall be separately bunded. All structures comprising the bunded areas shall be tested to a suitable head to ensure that they are oilproof and waterproof. All oil unloading areas shall have special sumps for collecting any spillage or washings. A surface water channel shall be provided with suitable traps and complete with penstocks to deal with minor spillages.

4.17 The developer shall, in agreement with the planning authority, provide and have available on the site suitable equipment (including oil booms), dispersants and oleophilic agents for use in case of an oil spillage. Personnel shall be trained by the developer in the use of such equipment.

5.0 AIR POLLUTION ABATEMENT

5.1 The two chimneys shall be designed as tall stacks and the outer shell shall be of reinforced concrete construction, each chimney being sized to serve not more than two boilers.

5.2 Each chimney shall be not less than 200 metres in height over ground level.

5.3 Each chimney shall have a design efflux velocity of 22.5 metres per second at full load.

5.4 The average daily ground level concentration of sulphur dioxide (SO_2) arising from the emissions from the proposed development measured at any point shall not exceed 45 microgrammes per cubic metre.

5.5 The daily mean ground level concentration of Nitric Oxide (NO) and Nitrogen Dioxide (NO_2) shall not exceed 15 and 1.5 microgrammes per cubic metre respectively.

5.6 A smoke density device shall be provided in each boiler flue to monitor smoke levels.

5.7 The emission from each chimney shall meet the highest standards possible but shall not be less than the standards required by the Control of Atmospheric Pollution Regulations, 1970 (S.1. No. 156 of 1970) made under Local Government (Sanitary Services) Act, 1962.

5.8 Gas sampling points shall be provided for each chimney stack and access to these points by employees or agents of the planning authority duly authorised for this purpose by the planning authority shall be provided by the developer at all reasonable times.

5.9 For a period of not less than twelve months prior to the commissioning of the plant, a comprehensive monitoring programme to be agreed with the planning authority shall be undertaken, to measure the background levels of sulphur dioxide and particulate matter in the area. The results of this survey shall be made available to the planning authority at such intervals as may be required by the planning authority.

5.10 Details of precipitators to be installed shall be submitted to the planning authority for agreement. They shall be capable of removing sufficient quantity of solid particles from flue gases to enable the standards prescribed in conditions 5.7 to 5.11 to be achieved.

5.11 The average monthly emission from each chimney of particulate matter shall not exceed 150 milligrammes per cubic metre.

5.12 Atmospheric emissions shall be monitored by the developer subsequent to the start up of the plant and at such frequency thereafter as shall be agreed with the planning authority. The results of such monitoring shall be made available to the planning authority at regular intervals and as required by the planning authority.

6.0 COAL STORAGE AND ASH DISPOSAL

6.1 Coal in the coal store shall not be stacked or compacted to a height in excess of 15 metres.

6.2 The coal storage area shall be bounded by an earthen embankment or otherwise screened to the satisfaction of the planning authority.

6.3 The conveyor system for moving coal shall be enclosed with cladding of a type to be agreed with the planning authority.

6.4 The coal storage area shall not be extended except with approval under

the Local Government (Planning and Development) Acts, 1963 and 1976, which shall be the subject of a separate planning application.

6.5 A sprinkling and dampening system shall be provided to enable the entire coal handling and storage areas to be sprinkled and dampened whenever necessary to prevent dust nuisance.

6.6 Every precaution shall be taken in the unloading, transporting and stacking of coal to prevent undue dust arising. Dust arising from these areas shall be monitored at intervals to be agreed with the planning authority and the results shall be submitted to the planning authority.

6.7 Ash from precipitators and boilers shall be collected in enclosed systems, mixed with water and pumped to the disposal area.

6.8 Every precaution shall be taken at all times in the operation of ash disposal to prevent dust arising. Dust arising from this area shall be monitored at intervals to be agreed with the planning authority and the results shall be submitted to the planning authority.

6.9 The ash disposal area shall be surrounded with earth embankments and treated in accordance with the landscape scheme and programme provided for in condition 1.11.

6.10 The ash disposal area shall be filled in sections and each section when filled shall be treated and reinstated in accordance with a scheme and programme to be submitted to and agreed with the planning authority by the developer.

6.11 The ash disposal area shall not be extended except with approval under the Local Government (Planning and Development) Acts, 1963 and 1976, which shall be the subject of a separate planning application.

7.0 NOISE ABATEMENT

7.1 The noise level from the plant measured at the nearest dwelling on any day during the period 0700 hours to 2200 hours and during the period of ship unloading shall not exceed an equivalent sound level of 50 dBA and at all other times shall not exceed 40 dBA.

7.2 Steam discharges during plant start up shall be silenced to comply with the standards prescribed in condition 7.1

7.3 Special silencing measures to be agreed with the planning authority shall be taken where problems are experienced in plant noise with pure tonal component.

7.4 Coal shall not be transferred from the coal store to the bunkers (located in the main station building) during the hours from 2200 hours to 0700 hours except in very exceptional circumstances.

7.5 The developer shall install recording devices for monitoring noise levels

at the site boundary. A monitoring programme shall be submitted to and agreed with the planning authority.

7.6 The developer shall comply with current law and regulations governing the purchase, storage, handling and use of explosives and transport of same to and from the site. Blasting operations shall not be carried out between the hours of 2200 hours and 0700 hours.

Signed on behalf of Clare County Council

for County Secretary,
Planning Section, New Road,
Ennis, Co. Clare.

Dated this *13* day of *March*, 1979.

ECONOMIC AND SOCIAL RESEARCH INSTITUTE

SURVEY OF WORKERS AT MONEYPOINT AUGUST 1980

I'm from the Economic and Social Research Institute. As you may know, the Planning Authorities have asked that a study be conducted of the impact of the Moneypoint Generating Station on the local area, and we have been commissioned to carry out this study. To help us in our inquiry, we are asking a sample of workers about their experiences: how they like living in Clare, what facilities are needed etc. We would be very grateful if you could help us by answering some questions on these topics.

Everything you say will be treated in the strictest confidence and no information about any individual will be released to anyone outside the ESRI. The only use to which your responses will be put is the construction of statistical tables.

First of all, I'd like to get some background information about you.

FOR OFFICE USE ONLY
CARD 1
I. D. [ ] [ ] [ ]
1 2 3

(1) Age [ ][ ] years — [ ][ ] 4 5

(2) Sex: Male ..... 1 Female ..... 2 — [ ] 6

(3) Married ..... 1 Single ..... 2 Widowed/Separated ..... 3 — [ ] 7

(4) Number of (a) Children dependent on you ..... [ ][ ] — [ ][ ] 8 9

(b) Other dependants (including wife) ..... [ ] — [ ] 10

(5) What age were you when you completed your full-time education? [ ][ ] — [ ][ ] 11 12

(6) What type of education was this?

Primary 1
Vocational 2
Secondary 3
Third Level 4
Other 5

[ ] 13

(7) Did you ever serve an apprenticeship or receive training in any occupation?

Yes ..... 1 No ..... 2 — [ ] 14

(8) Served apprenticeship 1
Received special training .... 2 — [ ] 15

Occupation(s) in question _____ — [ ] 16

(9) Where are you living at the moment? _____ — [ ][ ] 17 18
(i.e. residence from which you travel to work each day)

(10) How far is this from the site at Moneypoint? [ ][ ] miles — [ ][ ] 19 20

(11) How do you usually come to work (circle one number) — [ ] 21

Own car 1	Public Transport 5
Own motor bike 2	Employers' Transport 6
Own bicycle 3	Walk 7
Get a lift 4	Other (specify) 8

_____

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p.7

(12) (a) How many Moneypoint workers share this dwelling with you? ☐ 22

(b) Is the residence at (9) above? (circle one number)

Detached/Semi-Detached House 1
Terrace House 2
Mobile Home/Caravan 3
Rented flat or room 4
Lodgings 5

(13) Is this dwelling (a) owned by you 1
(b) owned by your parents 2
(c) owned by another relative of yours 3
(d) owned by a non-relative ..... 4 ☐ 23

(14) (a) Do you pay rent Yes.....1 No.....2 ☐ 24

(b) (If respondent has rented house) Why did you rent a house rather than take a flat, room or lodgings?

_____

_____

p. 7

(15) Is there anything about this dwelling that you dislike? ☐ 25 ☐ 26 ☐ 27

_____

_____

(16) Overall, how do you feel about this dwelling?

Very satisfied 1
Fairly satisfied 2
Fairly dissatisfied 3
Very dissatisfied ..... 4 ☐ 28

(17) Where did you spend most of your childhood (up to age 16)?

County _____ ☐☐ 29 30

(18) Were you living in Clare or North Kerry immediately before taking a job on this site? ☐ 31

Yes ..... 1 No 2

If Yes, do you at the moment

Own a farm which you operate or help to operate 1
Own a farm which is let to someone else 2
Rent a farm which you operate or help to operate 3
None of these ..... 4 ☐ 32

If you own or operate a farm, how many statute acres are in it? ☐☐☐ 33 34 35

What is its rateable valuation (excluding house) £ ☐☐☐ 36 37 38

Who manages the farm? (Circle all that apply)

Self 1
Parent 2
Brother 3
Wife 4
Children 5
Other relative 6
Manager or other paid employee 7
Other (specify) 8

_____ ☐ 39 ☐ 40 ☐ 41

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CARD 1

(19) (If married) Is your wife living here in the Moneypoint area with you? Yes ... 1 | No ... 2 — 42

If No, in what county is she living? County — 43 44

How far from Moneypoint is her residence? ___ miles — 45 46 47

How often do you visit your wife?

- Most weekends 1
- Every second weekend 2
- Every month 3
- Less frequently 4

— 48

(20) Do you have any children at school in the Moneypoint area? Yes .... 1 | No .... 2 — 49

Please indicate (a) which type of school they attend and (b) how satisfied you are with the school (Circle two numbers on each line)

Type	Do you have children at this type of school		Are You		
			Very Satisfied	Satisfied	Dissatisfied
	Yes	No			
Primary	1	2	1	2	3
Vocational	1	2	1	2	3
Secondary	1	2	1	2	3
Other	1	2	1	2	3

50 51 / 52 53 / 54 55 / 56 57

If you are dissatisfied with any of the schools, why is this?

58 / 59 / 60

Now I'd like to ask you about your past and present jobs.

(21) What sort of job did you have immediately prior to this one? (Interviewer: write description and code below)

None, was unemployed 1
None, was at school 2
None, was in home duties 3
Hired Farm Worker 4
Work on own farm 5
Work on family farm 6
Job similar to one now held 7
Clerical job different from present one .. 8
Skilled job different from present one ... X
Unskilled/semi-skilled job different from present one ..... Y

— 61 — 62

(22) In what County was your previous job? — 63 64

(23) How long have you been working here at Moneypoint? ___ months — 65 66 67

(24) How long more do you expect to remain working on this site? ___ months — 68 69 70

4

FOR OFFICE USE ONLY CARD 1

71

72

(25) (a) What kind of work do you do here at Moneypoint? (Describe)

_____

_____

_____

(Interviewer: code below from above description)

Clerical/Administrative		Manual	
Professional/Managerial	1	Skilled Supervisory	4
Clerical Supervisory	2	Skilled	5
Clerical	3	Semi-Skilled Supervisory	6
		Semi-Skilled	7
		Unskilled Supervisory	8
		Unskilled	9

(b) How long is your basic working week? ☐☐ hours — 73, 74

And about how many hours overtime do you work? ☐☐ hours — 75, 76

77, 78

(c) If not on shift, at what time do you start work in the morning? _____

79 = Blank
80 = 1
CARD 2 Dup 1-3

(26) Have you received or are you receiving any formal training in new skills while working here?

Yes ..... 1 No ..... 2 — 4

(27) (a) Who is your present employer? J.M.J. ... 1 Ascon ... 2 Kelvin ... 3 E.S.B. ... 4

Other (specify) _____ — 5

(b) How long have you been working for him? ☐☐ years — 6 7

(28) Are you employed in a temporary or permanent capacity?

Temporary ..... 1 Permanent ..... 2 — 8

(29) Do you or your spouse have any source of income besides your job in Moneypoint?

Yes ..... 1 No ..... 2 — 9

If YES, code all that apply

Shop	1	Respondent has second job	4
Pub	2	Spouse has job	5
Farm	3	Other source (specify)	6

_____

_____

10 11 12

(30) When the job here finishes where will you go?

Stay in Co. Clare ..... 1→ in what district? _____

Stay in Ireland outside Co. Clare .. 2

Emigrate 3

13 14

(31) What sort of job do you think you will go to when this job finishes?

Site work	1	Work in own business	5
Industrial Employment	2	Home duties	6
Job as Farm Worker	3	Other (specify)	7
Work on own farm	4		

_____

_____

15

5

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CARD 2

(32) (a) What is your average gross weekly pay (i.e., before tax or other deductions from your job at Moneypoint)? £ ___ Page 7 below

(b) What is your average weekly take-home (i.e., after tax) pay from your job at Moneypoint? (i.e., usual pay less PAYE and Social Welfare Contribution) £ ___ 16 - 18

(33) (a) What proportion of this is spent in County Clare? ___ % 19 - 21

(b) And what proportion is spent outside County Clare? ___ % 22 - 24

(c) And what proportion do you save? ___ % 25 - 27

(Interviewer: check that these percentages add to 100%)

Coder - go to p. 7

(If saves some) On what do you think you will spend your savings?

_____

Where will you spend them _____

When will you spend them _____

(34) Could you say approximately how much you spent in the last seven days in Co. Clare on each of the following:

	£ . p.	
Food	___ . ___	28 - 32
Drink	___ . ___	33 - 37
Tobacco	___ . ___	38 - 41
Clothes	___ . ___	42 - 46
Rent	___ . ___	47 - 50
Gas, electricity, heating	___ . ___	51 - 54
Petrol/oil for car or motor bike	___ . ___	55 - 58
Repairs/servicing for car or motor bike	___ . ___	59 - 62
Household durables (fridges, T.V.'s, etc.)	___ . ___	63 - 67
Miscellaneous household goods (soap, polish, etc.)	___ . ___	68 - 71
Entertainment (e.g. admission to cinema, sports, etc.,)	___ . ___	72 - 75
Hairdressing	___ . ___	76 - 79
Medical expenses	___ . ___	80 = 2 CARD 3, Dup. 1-3 4 - 7
Childrens' school fees (to schools in Clare)	___ . ___	8 - 11
Home repairs	___ . ___	12 - 15
Other expenditure	___ . ___	16 - 19
Total	___ . ___	20 - 24

(35) In which district(s) in County Clare do you usually shop? And about what percentage of shopping do you do in each district?

1. _____ ___ 25, 26 ___ 27 28

2. _____ ___ 29, 30 ___ 31 32

3. _____ ___ 33, 34 ___ 35 36

4. _____ ___ 37, 38 ___ 39 40

(Interviewer: check that these percentages add to 100%)

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CARD 3

(36) In the case of each of the following groups of people, could you say how friendly or unfriendly they are towards Moneypoint workers?

	Very Friendly	Friendly	Neither friendly nor unfriendly	Hostile	Very Hostile	
Publicans	1	2	3	4	5	41
Shopkeepers	1	2	3	4	5	42
Gardai	1	2	3	4	5	43
Local people generally	1	2	3	4	5	44

(37) Do you think local people have any complaints about the Moneypoint workers?

If Yes, what are they? _____ 45

_____ 46

_____ 47

(38) As far as you know, are these facilities in this area for the following sports and pastimes, and do you take part in them?

Entertainment or Sport	Are facilities available			Do you attend or take part		
	Yes	No	Don't Know	Yes	No	
Dancing	1	2	9	1	2	48, 49
Drama	1	2	9	1	2	50, 51
Cinema	1	2	9	1	2	52, 53
Concerts	1	2	9	1	2	54, 55
Rugby	1	2	9	1	2	56, 57
Gaelic Football	1	2	9	1	2	58, 59
Soccer	1	2	9	1	2	60, 61
Handball/Squash	1	2	9	1	2	62, 63
Golf	1	2	9	1	2	64, 65
Tennis	1	2	9	1	2	66, 67
Badminton	1	2	9	1	2	68, 69
Traditional Music	1	2	9	1	2	70, 71

(39) Are there any other sports or pastimes which you practise in Co. Clare?

(List) _____ 72

_____ 73

_____ 74

(40) Are there any sport or recreational facilities that you'd like to see introduced into the area?

_____ 75

_____ 76

_____ 77

78-79(Blank)80=3

(41) THIS PAGE APPLIES ONLY TO THOSE WHO DO NOT OWN A DWELLING IN THE MONEYPOINT AREA

Let us assume that you were to stay on permanently in a job in Moneypoint, and rent, purchase or build a house. In the case of each of the following areas, could you say whether you would like or dislike living there? (Interviewer: Hand Respondent Card A and circle one number on each line)

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CARD 4 Dup. 1-3

Town	Would very much like to live there	Would like to live there	Indifferent	Would not like to live there	Would very much dislike to live there	Don't Know	
Kilrush	1	2	3	4	5	9	4
Killimer	1	2	3	4	5	9	5
Labasheeda	1	2	3	4	5	9	6
Cooraclare	1	2	3	4	5	9	7
Ennis	1	2	3	4	5	9	8
Kilkee	1	2	3	4	5	9	9
Knock	1	2	3	4	5	9	10
Kilmihill	1	2	3	4	5	9	11
Doonbeg	1	2	3	4	5	9	12
Milltown Malbay	1	2	3	4	5	9	13
Lissycasey	1	2	3	4	5	9	14
Carrigaholt	1	2	3	4	5	9	15
Querrin	1	2	3	4	5	9	16

(42) Of all these towns which one would you most like to live in? _____ [17][18]

Why do you say that? _____ [19]

_____ [20]

_____ [21]

(43) Of all these towns which one would you most dislike to live in? _____ [22][23]

Why do you say that? _____ [24]

_____ [25]

_____ [26]

(44) Would you prefer to rent or to buy your house? Rent.....1 Buy..... 2 [27]

(45) When you first came to Moneypoint, did you have any difficulty in finding accommodation? [28]

Yes.....1 No..... 2

If yes, could you describe these difficulties? _____ [29][30]

_____

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G. W. P. [31][32][33] Buy [34][35] Where [36][37] When [38][39]

share with [40] why rent [41]

42-79 = Blank

80 = 4

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