PLANNING APPLICATION BY MONOPOWER LTD.

EVALUATION OF ENVIRONMENTAL IMPACT ASSESSMENT, INCLUDING ADDITIONAL INFORMATION SENT TO MONAGHAN COUNTY COUNCIL DATED 26 MAY 2005

Prepared for:

Monaghan County Council
County Offices
The Glen
Monaghan

Prepared by:

Fehily Timoney & Company
Core House
Pouladuff Road
Cork

January 2006

PLANNING APPLICATION BY MONOPOWER LTD.

EVALUATION OF ENVIRONMENTAL IMPACT ASSESSMENT, INCLUDING ADDITIONAL INFORMATION SENT TO MONAGHAN COUNTY COUNCIL DATED 26 MAY 2005

User is Responsible for Checking the Revision Status of This Document

Rev. Nr.	Description of Changes	Prepared by:	Checked by:	Approved by:	Date:
0	Initial Draft	BG	DOS		04/01/06
1	Issue to Client	BG	DOS		12/01/06

TABLE OF CONTENTS

PAGE

LIST OF TABLES

1. INTRODUCTION

A planning application was made on behalf of Monopower Ltd to Monaghan County Council in June 2003 for what was described by the developer as the Killycarran Biomass Combined Heat and Power Plant. This was to be situated in a rural location a few miles from Emyvale, County Monaghan. It was proposed that the facility would involve the generation of 20 MW of electricity for the national grid, with the plant being fuelled by a maximum of about 350,000 tonnes of mainly spent mushroom compost and poultry litter. Given the scale of the development, an Environmental Impact Statement (EIS) was submitted with the application.

Following receipt of the application, Fehily Timoney & Co. Ltd (FTC) was retained by Monaghan County Council to assist in the assessment of the EIS for this proposed facility. A preliminary assessment was made of the relevant documentation, the result being that a notice in accordance with Article 33 of the Planning and Development Regulations 2001 was issued to the developer by Monaghan County Council on 6 August 2003. That notice highlighted a number of significant deficiencies in the EIS and requested that these were addressed and that other clarification was supplied.

The developer replied to the notice on 5 November 2003. This document was structured around the subject headings used in the planning authority's notice, with an item-by-item response following.

For the reason that a number of uncertainties arose in relation to the content of the EIS – a number of which were not resolved by the developer's reply received by Monaghan County Council in November 2003 – legal advice also was sought. A reply was received in March 2004.

As a consequence of the incomplete nature of the developer's response to the local authority's notice of August 2003, a second notice was sent to Monopower Ltd in December 2004. Besides requesting additional clarification on a number of unresolved issues, this notice reiterated some elements of the questions already put to the developer. The developer in the first notice was urged to fully consider the questions raised by both notices and to provide complete and coherent responses to them. This notice resulted in a more lengthy response from the developer, which was received by Monaghan County Council on 26 May 2005.

In parallel to the notices and responses described above, a series of consultations were undertaken in the manner set down in the Planning and Development Act 2000 in respect of the relevant competent authorities in Northern Ireland. In addition, the receipt of additional information relating to the EIS was advertised, with third parties being given an opportunity to make submissions.

This report comprises FTC's analysis of the original EIS and the additional information submitted by the developer.

This report is structured in the following sequence.

- For the reason that both of the developer's responses to the local authority's notices raise significant questions about the role of a planning authority in relation to an EIS submitted under the Planning and Development Act 2000, this issue is dealt with at the start of the report.

- This is followed by a conceptual discussion of the nature and content of an EIS and, particularly, the options that are open to a local authority when relevant material has been found to have been omitted.

- An assessment of completeness of the EIS for the Killycarran proposal is then made, being structured in a way that follows the statutory requirements on EIS documents, and which is set down in Schedule 6 to the Planning and Development Regulations 2001.

- The last section of this report contains a number of summary conclusions which draw the earlier analysis together and which form the basis of a recommendation by FTC as to the acceptability of this development.

A separate addendum report by FTC covers an analysis of the submissions received from third parties. However, a number of the issues raised in the submissions have been considered and embraced by the content of this report.

2. ROLES OF STATUTORY BODIES IN GRANTING DEVELOPMENT CONSENT

A significant problem arises with the planning application for the Killycarran facility due to what appears to be a fundamental misunderstanding by the developer of the role of - and interaction between - on the one hand, the local authority and EPA and, on the other hand, an EIS. It is readily apparent from all of the supplementary material submitted that the developer remains of the opinion that the pollution control-related aspects of this development are somehow totally excluded from the scope of the relevant considerations of the planning authority. For example, the supplementary material submitted in May 2005 contains a repeated contention, typified by sentences such as:

"… it is not within the remit of the local authority to seek additional information on this matter. … Requests for additional information and clarification on this matter will however be dealt with in the interests of transparency".

The developer has however, despite these protests, submitted a significant proportion of the requested information.

In respect of what is perceived to be the role of the planning authority in respect of development consent for this proposed facility, there are two aspects which are worthy of comment.

2.1. The Local Authority's Role

Under the Planning and Development Act 2000, the consideration of a major development that needs both planning permission and either a waste licence or IPPC licence no longer is entirely split between a local authority and the EPA. While a local authority is precluded from drafting conditions relating to environmental pollution issues, the authority is charged with considering all aspects of a proposed development – including those which, if development consent was granted, would be subject to conditions set down by the EPA. This is because Section 34(2)(c) of the 2000 Act, operating in conjunction with either Section 54(3A) of the Waste Management Act or Section 99F(2) of the Environmental Protection Agency Act, allows a local authority to refuse to grant planning permission where a licensable development is unacceptable on "environmental grounds".

This provision came into effect on 11 March 2002. It is significant in this context to note that the planning application for the Killycarran facility is stamped as being submitted to Monaghan County Council in June 2003. There is therefore no doubt that this planning application needs to be considered under the 2000 Act. Accordingly, the criteria set down in that Act under which planning applications are judged apply.

2.2. The Role of an EIS

The purpose of an EIS for development of this type is to inform the planning authority, the public and the EPA of all relevant aspects of the development, of all significant environmental effects and of the measures by which such effects are to be mitigated. This not only stems from the local authority's role in considering the acceptability of the development in respect of

the Planning and Development Act 2000 but also because the EIS will form part of the documentation submitted to the EPA with any waste licence or IPPC licence application.

What is clear from the legislation and other relevant material is that an EIS must be a comprehensive document. Outside of what has been written in various places by the developer in relation to the Killycarran application, there is no suggestion in the national legislation or in the parent EU Directive that an EIS submitted to a planning authority should confine itself to planning-related or - for want of a better phrase – non-pollution related aspects of the development. Indeed, if that was the case, a separate EIS would then have to be submitted to the EPA which covers the omitted pollution-related material concerning the development. In reality, what happens is that all of the relevant material is submitted in the one EIS. Once it is complete, this EIS is then a fundamental source document to both the planning authority and the EPA. That this is the case is abundantly clear from both the EU EIA Directive and from the national legislation.

2.2.1. What Information Should be in an EIS

It is a statutory requirement on the planning authority to decide whether the original EIS and any additional information submitted by the developer for the proposed Killycarran facility fully complies with the requirements of the Planning and Development Act. Moreover, it is also required that the planning authority ensures that all significant impacts are adequately evaluated and, where appropriate, mitigated. This is because:

a) the relevant legislation requires that specified material must be included within an EIS, and

b) the EIS must be sufficiently complete so that the planning authority is fully aware of all of the relevant issues and hence is able to make an informed decision on the acceptability of the development.

Ultimately, the content of an EIS is primary source material for decisions made under Section 34 of the Planning and Development Act itself. As said, in conjunction with either the Waste Management Act or Environmental Protection Agency Act, Section 34 allows for a planning authority to decide whether a proposed development is acceptable on environmental grounds and hence whether development consent should be granted or withheld.

Both the national legislation and the EU Directive which governs the content of environmental impact statements require that an EIS should contain:

(a) A description of the proposed development comprising information on the site, design and size of the proposed development.
(b) A description of the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects.
(c) The data required to identify and assess the main effects which the proposed development is likely to have on the environment.
(d) An outline of the main alternatives studied by the developer and an indication of the main reasons for his or her choice, taking into account the effects on the environment.

Besides the broad headings, additional detail in respect of a development is also required. These requirements are set down in the remaining parts of Schedule 6 to the Planning and Development Regulations 2000.

The EIS compilation process and EIS content is also informed by a number of other sources. This includes the:

- EPA's Guidelines on the Information to be Contained in Environmental Impact Statements (2002) and
- the Advice Notes on Current Practice (in the preparation of Environmental Impact Statements) (2003).

The need to have regard to these documents is made obligatory by Section 72(3) of the Environmental Protection Agency Act 1992. Hence Monaghan County Council as planning authority is required to consider the content of these documents in its evaluation of the Killycarran proposal. And this is why the notice served on the developer by the County Council of August 2003 asked for confirmation that the Killycarran EIS conforms to the guidance contained in these publications.

Secondly, the High Court, Supreme Court and the European Court of Justice also have roles in interpreting all legislation, including that which pertains to the consideration of an EIS. At the present time, the Irish courts appear to have not been asked to consider issues to do with the required standards of adequacy of an EIS. However, this matter has exercised the British courts. While judgments from the UK are not binding on Ireland, they may be considered, and followed if they are persuasive.

In respect of the Killycarran proposal, there have been two useful and relevant judgments of the British High Court which set down a general framework for the consideration of the completeness of an EIS. The judgments are John Kent v First Secretary of State & ors ([2005] Env Law Reports 30 at 607) and Hereford Waste Watchers Ltd v Hereford Council ([2005] Env Law Reports 29 at 586). Both of these review the EU requirements and earlier case law, making the point that the courts will not interfere in the nature of a decision by a planning authority unless it:

a) has been made without fully following the legislative requirements; or
b) is somehow so unreasonable that no reasonably-acting planning authority would have come to it (the so-called "Wednesbury principles").

A limited number of extracts from these judgments can be used to establish the relevant principles by which an EIS should be considered by a planning authority. These greatly assist in the consideration of the material submitted by the developer on the Killycarran proposal.

Firstly, in the John Kent case, Mr Justice Harrison reviews the case law on EIS content and sums-up by stating (para 76):

"The authorities show that, whilst the environmental statement must contain sufficient information to enable the decision maker to make an informed judgment as to whether the development is likely to have a significant effect on the environment, it is for the decision maker to decide whether the information contained in the document is sufficient to meet the definition of an environmental statement in Regulation 2 of the EIA Regulations, subject only to review on Wednesbury grounds, whilst also bearing in mind that the document does not have to contain information about all the effects, only the "main effects" or "the likely significant effects". Furthermore, the judgment as to what is a "main effect" or a "likely significant effect" is one for the decision maker, not the court, subject to normal Wednesbury principles."

The most important aspects of this quotation are:

a) the reference to the need for a planning authority to make a fully-informed decision about whether significant environment affects are likely to occur, and

b) that the EU legislation sets cut-offs which preclude the need for an EIS to document trivial effects.

However, it is also asserted that an EIS must fully cover the "main effects" and "likely significant effects". Again, it must be emphasised that, as these phrases feature in the EU EIA Directive, they also contained in the Irish Planning and Development Regulations.

Besides its comprehensive summary of earlier case law, the Hereford Waste Watchers judgment also looks at the context within which an EIS must address the main effects or likely significant effects associated with a development. Referring to an earlier judgment of the European Court of Justice against Germany (Case C-431/92), it points out that a significant purpose of the EIS procedure is to ensure that all relevant information about the environmental impacts of a project are included in order to further a public debate about a project's merits prior to development consent being decided upon (see para 15 of the judgment). It continues by stating (para. 16):

"The emphasis therefore is on the need for a fully informed decision, the relevant information being provided in the first place by the developer, with further information resulting from the public consultation".

Like John Kent, there is the acknowledgement in Hereford Waste Watchers that the EIS process only pertains to non-trivial aspects. However, regarding more major issues, it is then observed that in respect of earlier court judgments (para 25):

"The authorities make it clear, therefore, that if the planning authority consider that a process or activity will have significant environmental effects then the ES needs to include the detailed information identified … [as being required by the national regulations]*. It cannot leave the matter to be covered by* [planning] *conditions at a later stage. Even if that might otherwise be a satisfactory way of dealing with the problem, it frustrates the democratic purpose of the consultation process".* [Clarification added in square brackets]

In other words, it is reiterated that the public consultation elements of the EIS process – which were originally enshrined in the EU Directive – would be thwarted if some aspects are missing from an EIS. However, as noted earlier, these items must relate to non-trivial aspects of a development.

What is also particularly attractive about the Hereford Waste Watchers judgment are the five material principles it sets down, which sum-up a planning authority's role in the consideration of an EIS. These are that (para. 34):

1. *"The decision whether a process or activity has significant environmental effects is a matter for the judgment of the planning authority. In making that judgment it must have sufficient details of the nature of the development, of its impact on the environment and of any mitigating measures.*
2. *"Equally, it is for the planning authority to decide whether it has sufficient information to enable it to make the relevant judgment. It need not have all available material provided it is satisfied that it has sufficient to enable a clear decision to be reached.*
3. *"In making that determination, the planning authority can have regard to the mitigating measures provided that they are sufficiently specific, they are available and there is no real doubt about their effectiveness. However, the more sophisticated the mitigating measures and the more controversy there is about their efficacy, the more difficult it will be for the authority to reach a decision that the effects are not likely to be significant.*
4. *"If the authority is left uncertain as to the effects, so that it is not sure whether they may be significant or not, it should either seek further information from the developer before reaching a conclusion, or if an ES has already been provided it should require a supplement to the ES which provides the necessary data and information. It cannot seek to regulate any future potential difficulties merely by the imposition of conditions.*
5. *"The authority cannot dispense with the need for further information on the basis that it is not sure whether or not there are significant environmental effects, but that even if there are, other enforcement agencies will ensure that steps are taken to prevent improper pollution. However, it should assume that other agencies will act competently and it should not therefore anticipate problems or difficulties on the basis that those agencies may not do so."*

These five guiding principles form the framework for the assessment of the EIS for the Killycarran facility which is set down in the remainder of this report.

2.2.2. An Assessment of the Completeness of the EIS for the Killycarran Facility

In a number of instances, the EIS originally submitted on the Killycarran development was materially lacking on some key aspects. Due to concerns about significant gaps in the information provided, Monaghan County Council has twice issued notices to the developer to provide additional information. Issues of particular concern included:

- Human environment
- Site selection
- Traffic impacts (including impacts from road widening)
- Stack emissions
- Odour emissions
- Noise emissions
- Surface water discharges
- Landscape impacts
- Construction-related impacts
- Power line impacts
- Ash management
- Accident-related impacts.

These concerns arise partly from the requirements of the national and EU legislation. They also arise because some important aspects were omitted from the project description, while certain significant or main effects were poorly documented, not assessed or inadequate mitigation proposals were made.

Having received not only the original EIS but also two responses relating to statutory notices requiring supplementary information, it is appropriate that a full assessment of the Killycarran proposal and of its environmental impacts is undertaken. Using the four headings extracted from Paragraph 1 of Schedule 6 to the Planning and Development Regulations, the completeness and otherwise adequacy of the Killycarran EIS can be evaluated. For the purposes of this report, the second and third headings of the four set down in Paragraph 1 have been re-ordered. This allows for a more logical sequence to be placed on the evaluation, which is to occur in the following order:

1. Description of the development
2. Data required to assess the main affects
3. Mitigation measures
4. Alternatives

These items will be considered below, under headings which comprise the exact wording of the items set down in Paragraph 1, Schedule 6 to the Planning and Development Regulations 2001.

2.3. A Description of the Proposed Development Comprising Information on the Site, Design and Size of the Proposed Development

2.3.1. The Proposed Facility

As it was originally submitted, the EIS for the Killycarran facility contained a notable lack of integration between the supporting text and the bundle of drawings illustrating the spatial configuration of the proposed facility. Since then, additional information has been submitted which, when taken as a whole, provides a reasonable indication of what the proposed facility will comprise and look like.

2.3.2. Secondary Developments

As set down on Page 18 of the EPA's Guidelines on Environmental Impact Statements, the project description in an EIS must not overlook off-site developments such as power lines and road upgrading. The EPA notes that these may be associated with secondary impacts. Accordingly, the two notices from the County Council requested the submission of additional information on power line construction and road widening.

Additional material on power line construction is set out in Section 10.2.2 of the report submitted to the County Council on 26 May 2005. Two options are presented on page 64, being set out on Figure 10.2 (the text erroneously refers to Figure 10.1). However, a third option, which involves underground cabling, seems to be also proposed in the bracketed sentence on page 65: "(An underground transmission line may also be deemed suitable)". Precisely what this means is not immediately clear. Nevertheless, Figure 10.2 sets down the alternative cabling routes and the text covers the relative voltages of the options, location of sub-stations and some other material on why the routes were selected. Accordingly, and given the difficulties associated with setting down exact power line routes prior to development consent and subsequent ESB approvals being issued, this component of the EIS seems now to be adequate.

In respect of the very extensive road widening associated with the Killycarran proposal, the relevant details of what this entails makes up a major component of the report received by the County Council on 26 May 2005. The details are contained in an attached report by QED Engineering Ltd and Malone O'Regan Consulting Engineers. This report, in conjunction with the relevant drawings, appears to be an adequate description of the physical nature of the road-widening envisaged.

3. THE DATA REQUIRED TO IDENTIFY AND ASSESS THE MAIN EFFECTS WHICH THE PROPOSED DEVELOPMENT IS LIKELY TO HAVE ON THE ENVIRONMENT

3.1. Human environment

In summary, the applicant was requested by Monaghan County Council in its second request for further information issued in December 2004 to provide information on *"the impact on property values and the quality of life for residents in the immediate area of the proposed Killycarran development".*

The submission received on 26 May 2005 by the developer addresses this request. However, the analysis is centred upon a direct comparison between wind farms that have been constructed in the UK and this proposed facility (see Section 3, page 20). The stated objective is to determine the impact on property values. The developer's justification for this comparison is that a wind farms and the proposed Killycarran facility are both forms of renewable energy generation.

There are a number of obvious reasons as to why this comparison is inappropriate and invalid, most notably:

- The operation of a wind farm does not require the delivery of 353,000 tonnes of waste material per annum for it to operate
- There are no direct atmospheric and aqueous emissions associated with the operation of a wind farm
- There are no potential odours associated with a wind farm.

A more appropriate comparison might have been made to a waste management facility. This is because many waste facilities are of comparable scale in terms of waste input (thereby having equivalent vehicle movement impacts); they also can have similar atmospheric, aqueous and odour emissions associated with them.

Overall, it can be concluded that the developer did attempt to respond to the County Council's requirements to consider property values. It also has to be said that this is not an exercise that can be easily undertaken nor is there any tried-and-tested methodology that the developer should have used. Nevertheless, concerns remain about whether the comparison with a wind farm is appropriate for the reasons set out above. Overall, it is our view that, while a more valid attempt could have been undertaken, the methodological difficulties associated with an exercise of this type mean that what has been presented by the developer does not cause the whole of the Killycarran EIS to be viewed as fundamentally flawed.

The submission received by Monaghan County Council in May 2005 also contains additional information on local properties. It would seem that the number of houses within the 1 km radius boundary of the proposed facilities has been revised, reflecting additional houses constructed since the initial house-count was conducted in 2001. Three additional houses were identified. However, it would not appear that the applicants have identified whether any further houses were under construction or, while not yet constructed, had been granted planning permission. This seems to be an active issue, for the reason that, according to a number of submissions received by Monaghan County Council, at least one house is under construction and planning permission has been granted for other dwelling houses within the 1 km radius.

3.2. Traffic Impacts

A number of significant issues arise in respect of the material submitted by the developer in respect of traffic. These concern:

- Traffic Volume Estimates
- Road Widening
- Land Acquisition
- Assessment of Environmental Effects of Road Widening

Overall, it is deemed that the nature and configuration of the road widening proposed and the assessment of the environmental impacts of this part of the development remain inadequate.

a) **Traffic Volume Estimates**

Volume 3 of the original EIS for the Killycarran development predicts traffic movement to and from the facility (Section 7, Pages 203 & 204). In summary, the predicted two-way traffic volumes are outlined in the Table 3.1 below.

Table 3.1 Developer's Predictions of Traffic Flow when the Killycarran Facility is Operational

	Hourly Operational (one-way)	Peak Flow (two-way)
Cars & Vans	1-2	20
HGVs	12-14	12-14
Total PCU	37-44	56-62

(PCU – Passenger car units)

Overall, Table 3.1 predicts that HGV moving to and from the facility will be 120-140 vehicles per day. In making this assumption, the developers appear to assume that operational traffic will occur throughout the day, whilst employee traffic will occur during the am and pm.

The two notices issued by the local authority raise significant concerns that the traffic predictions may be significantly underestimating the likely picture The document prepared by Malone O'Regan in response (Section 4, page 2 attachment of the material submitted in May 2005) does not demonstrate that the traffic movements to and from the proposed facility were calculated on the basis of bulk density of spent mushroom compost, poultry litter, ash etc; rather, it appears that they were obtained via a telephone call with a haulier.

What seems clear is that, despite this issue being queried in the County Council's notices, the developer seems unable to demonstrate that the typical vehicle trailer size proposed can deliver 353,000 tonnes of spent mushroom compost and poultry litter to this facility and remove the approximately 47,000 tonnes of bottom and fly ash whilst not exceeding the predicted vehicle movement to and from the facility.

b) **Road Widening**

There would appear to be very significant issues arising from the nature of the road-widening proposed.

This is because the proposed upgrade design for the two approach roads (Figure 10.0 Further Information Request May 2005) does not make any provision for the upgrading of the bridge structures on these routes:

- One at Chainage + 1,072.00
- One at Chainage + 7,082.00

The result is that significant road safety concerns arise, as it would appear to be proposed that, while approach roads to the bridges are to be widened, the bridges are not to be replaced. The document contains no information regarding the condition of the bridges and their suitability to carry the predicted traffic loading.

Overall Design Criteria (Section 4 – page 6 MO'R report) gives the impression of local regrading. Requirements of Design Manual for Road and Bridges (DMRB) in respect of vertical, design should apply. No proposed levels are given.

The proposed design speed of 50 kph is the lowest available design speed in the NRA DMRB. It is a requirement of the NRA DMRB standards:

- to provide widening on curves where the proposed road cross section width is less than 7.3 m. Visibility requirements may also result in road widening.
- All structures need to be assessed for HGV loadings and design loadings of 35 HB units as well as HA standard loadings.
- Junctions should be designed to NRA TD 42/95.
- Roundabouts to NRA TD 16/93.
- R186 junction designed in accordance with TD 42/95.

It is unclear from the submission received from the applicant in May 2005 if any of the above points have been considered and included in the design criteria for the proposed roads upgrade.

No information is provided on traffic impacts on N2 or R186 junctions i.e. if queuing of vehicles on the N2 or the R186 is envisaged.

A particularly difficult junction arrangement is proposed at CH 305. An analysis of the swept path of vehicles meeting at this junction should be carried out to ensure sufficient width is provided for two vehicles meeting.

Insufficient information is provided regarding road surface treatment and structural design of pavement. Pavement design should comply with DMRB (conservative) or road Note 29 as agreed with Monaghan County Council.

A stage one Road Safety Audit should be supplied at this stage to ensure that the proposal can incorporate recommendations of a road safety auditor.

While a cost estimate has been provided, the figure of €0.25 Million per kilometre appears extremely conservative for the work required. Costing should include:

- design
- cost, land acquisition
- statutory procedures
- fencing
- accommodation works
- earthworks
- drainage
- pavements
- signage and lining
- road safety audits
- bridge assessment

c) **Land Acquisition**

It is indicated in Figure 10.1 that the land required to upgrade the existing LPO 1160, LPO 1150, LPO 1151 LOP 1133 and LOP 5142 approach roads to the plant must be acquired by the Monaghan County Council through the use of Compulsory Purchase Order (CPO) procedures. This is an unreasonable request.

A vertical profile to the DMRB will result in significant cuts/fills which will increase the indicated land takes and this is particularly important where houses are adjacent to the road. This impact has not been assessed.

d) **Assessment of Environmental Effects of Road Widening**

In the notice from Monaghan County Council dated 1 December 2004, the developer was informed that the road upgrading proposals "may have significant environmental effects". Accordingly, the developer was requested to provide "details of the environment and other impacts, as well as associated costs, of upgrading the road infrastructure to accommodate the proposed development…".

The report by Malone O'Regan and QED Engineering ends with a short section entitled "Environmental Impacts of Road Improvement". Its length and content allow it to be quoted in full:

"*The proposed road improvements will impact upon existing grass verges and, in places, on existing hedgerows and trees e.g. (1) at Chainage +4000 - see Photographs 44 and 45S where the existing road width is 3.8 metres, 2.g. (2) at Chainage + 6100 - see Photograph 73 where the existing road width is 3.7 metres.*

The proposals do seek to minimise such impacts by staying within the existing hedgerows where possible, by widening on only one side of the carriageway where possible, and by retaining 2 No. existing bridge structures. Impacts on existing watercourses would be kept to a minimum.

The impacts on other Environmental issues, e.g. archaeology, ecology, surface water quality, would be subject to professional assessment at the appropriate time.

In many respects, the impacts on the environment will be positive because the road safety will be improved, access to existing dwellings and businesses will be improved."

Besides the above information, additional material covering matters concerning road improvements is set out in Section 10.2 of the documentation received by the County Council on 26 May 2005. This contains a general, three-line, description of the affected habitats (see page 59/60). Mitigation measures are set down on Page 61. The bulleted list partially repeats the material quoted above, including the sentence "The impacts on other Environmental issues, e.g. archaeology, ecology, surface water quality, would be subject to professional assessment at the appropriate time".

The material submitted on 26 May 2005 does not comprise a response which satisfies the requirements of the notice served on the developer to provide the requisite details of the environmental impacts of road improvements. What seems notable in respect of this material is that there is no assessment at all of aspects such as the nature and extent of hedgerow and tree loss. No ecological studies have been done of this material: indeed, both the Malone O'Regan/QED report and the text on Page 61 of the main material submitted on 26 May 2003 state that ecological studies will be done later "at the appropriate time". In respect of this statement, it is difficult to see how the period after development consent has been issued can be referred to as "the appropriate time" to do these studies. This is because, once development consent has been issued, the road widening must go ahead. Accordingly, it is asserted that, contrary to what is said by the developer, the "appropriate time" to do such an assessment has to be as part of an EIS.

This is particularly relevant given the criteria set down in the Hereford Waste Watchers judgment and also the fact that road widening impacts are clearly non-trivial impacts. In other words, they fall within the concept of the "main effects" of the development.

Finally, a further factor that remains unclear from the material submitted in May 2005 is whether new housing or other built- development has taken place along the roads described in this part of the report. Concerns arise as to whether the submitted drawings are fully up-to-date. The drawings submitted by the developer are based on scanned versions of the OS 6" and 25" maps, which date from the 1950s or 1960s. The result is that there is significant uncertainty as to whether this material contains a full and complete assessment of the impacts associated with the realignment and upgrading proposals upon human beings.

3.3. Stack Emissions

1) **Data relating to compliance with statutory emission limit values**

An on-going issue of concern about this planning application relates to the correct control regime under which pollution-related emissions from the proposed Killycarran facility are to be modelled, assessed and mitigated. While the developers have consistently asserted that this is not an issue within the remit of the planning authority, this assertion seems open to dispute for reasons discussed earlier in this report.

Atmospheric emissions from large-scale power generation equipment fall within one of two EU Directives. What is important to note at the outset is that the emission limit values relating to stack discharges are more stringent under one regime than the other. This is highly significant to the Killycarran EIS for the reason that the atmospheric pollution dispersion modelling has been done only in relation to the laxer of the two sets of EU standards.

Accordingly, concerns would naturally arise if it is found that the incorrect emission standards have been used. If they have been, the emission modelling in the EIS is founded on incorrect assumptions. In then follows that, if the incorrect assumptions have been incorporated into the EIS, the whole basis of the EIS in relation to stack emissions, their mitigation, fall-out effects, etc, may not be correct.

The issue about which EU Directive applies has been raised with the developers in both the Planning Authority's notice of August 2003 and the more recent notice of 1 December 2004. The developer's most recent view is set out in Section 5 of the report submitted to the planning authority on 26 May 2005.

The relevant EU legislation is the Large Combustion Plant Directive (2001/80) and the Directive on Incineration (2000/76) (the developer's response of May 2005 also mentions a Directive on renewable energy (Directive 2001/77); however, as this does not cover emission limits, it appears not relevant to this issue)[1].

The developer indicates that all of the proposed waste inputs to the Killycarran facility fall within the exclusions set down in Article 2(2) of the Directive on Incineration. Accordingly, it is asserted that the lower emission limits contained in the Large Combustion Plant Directive apply.

As was pointed out to the developer in the County Council's notice of 1 December 2004, the exclusions in Article 2(2) of the Directive on incineration apply where "only" the wastes specified there under are processed. The difficulty here is that spent mushroom compost and particularly poultry litter do not appear to readily fall within these exclusions.

[1] Rather oddly, the emission limit values quoted in the EIS are those which are applicable for large combustion plants of thermal output 50 MWth or greater. The output of the proposed Killycarran plant is 20 MW, which is below the threshold relevant for the Large Combustion Plant Directive to apply.

It is especially difficult to see, for example, how poultry litter can fall into the exclusion which pertains to "vegetable waste". This is despite what the developer says on page 31 of the material received by the County Council on 26 May 2005, which asserts that "chicken litter is a waste residue from agriculture containing vegetable and animal substances". This may well be correct; however, it remains difficult to see how this material can be viewed to be "vegetable waste".

Since then, the EPA has also formed the view that the emission limits in the Large Combustion Plant Directive do not apply to the Killycarran proposal. This was communicated to the developer in a notice issued under Section 39A of the Waste Management Act dated 9 September 2005. On the request of the Planning Authority, the EPA also separately confirmed this position to Monaghan County Council, by way of a letter dated 15 September 2005.

It follows that what the developer has done in relation to providing data on emission-related effects is to undertake a stack dispersion modelling exercise which is based on the laxer of the two sets of emission limit values (see, for example, Table 5.5 of the material submitted to the County Council in May 2005). As set down in final column of Table 3.2 below, the correct limits - which are contained in the EU Waste Incineration Directive - are much more stringent. For example, a sulphur dioxide limit of 300 mg/Nm^3 applies to power stations, but the equivalent limit for waste incinerators is a much more stringent level of 50 mg/Nm^3. As no information seems to have been presented in the EIS to show compliance with these more stringent limits, there is little to give the planning authority any degree of comfort or certainty that these more stringent limits can be adhered to by the proposed Killycarran plant.

Table 3.2 Comparison between emission limits set by the EU Large Combustion Plan (LCP) and Waste Incineration (WID) Directives

Parameter	Max Conc. mg/Nm3 LCP Directive	Max Conc. mg/Nm3 WID Directive
Nitrogen Oxides-as NO_2	400	200
Sulphur Dioxide-SO_2	300	50
Particulates	20	10
Hydrogen Chloride-HCl	35	10
Carbon Monoxide-CO	200	-
Dioxins and Furans-PCDD and PCDF	0.1*	0.1*
Organic Substances-as total C	30	10

* ng

2) **<u>Other issues concerning data used for stack emission modelling</u>**

It would seem that the applicant has modelled dust emissions from the stack at Killycarran as aerosols. Aerosols are tiny solid particles or liquid droplets that remain suspended in the atmosphere for a long time. The particle size can range from 0.002 µm to more than 100 µm; in other words, from a gathering of a few molecules to the size where the particles no longer can be carried by the gas. The May 2005 submission (Sn. 5.4.4 pg 40) states that the dust fractions will be less than 10 µm and assumes it will act as an aerosol. It is not clear from the information received if the applicant treated the aerosol as a gas for modelling purposes. If this is the case no particle size or size fraction of particles are required for modelling purposes. However, this is an underestimation of the dispersion of the dust exhausting the stack. To model dust correctly requires that the size and level of dust at each size under 10 µm be known. In addition, metals emanating the stack will tend to bind to the particulate fraction giving the particles greater weight. Accordingly larger particles will tend to fall to the ground at shorter distances from the stack resulting in higher ground level concentrations with lighter particles dispersing over greater distances.

The applicant also states (correctly) in Section 4.6.6 of the main EIS that stack emissions of heavy metals depends on the content of heavy metals in the fuel feedstocks. The main heavy metals of concern are identified as cadmium and mercury, with the EIS indicating that both will be at low concentrations. This conclusion would appear to be based on cadmium and mercury making up a small percentage of the feedstock.

However, what appears to have been overlooked is the high content of arsenic (48 mg/kg) and vanadium (61 mg/kg) in the ash samples of the spent mushroom compost (see Table 12.2 pg 98 of the report submitted to the Planning Authority in May 2005). Both of these metals can give rise to significant health effects in appreciable concentrations. Instead, the applicant considers them as trace elements. What is also apparent is that the applicant has given no indication of how the heavy metals were modelled and whether the entire list of metals was modelled as a sum total, including the elevated levels of arsenic and vanadium. Finally, the EIS states on Sn. 4.6.6 of pg 131, that the predicted emissions of heavy metal are estimated at 5% of the total dust emissions from the stack. It is not clear how this 5% estimate was derived.

3.4. Odour Emissions

Odour emissions are adequately addressed in the supplementary information received in May 2005.

3.5. Noise Emissions

Concerns were raised with the developer about how noise impacts were discussed and assessed in the original EIS for the Killycarran facility. Relevant issues concerned both plant-related and traffic-related noise. These matters were rectified in the documentation submitted to the planning authority in May 2005, albeit that this discussion is founded on the assumption that the estimated truck movement will not exceed the predicted movements given in Table 3.1.

3.6. Surface Water Discharges

The notice dated 1 December 2004 from Monaghan County Council asserts that the surface water discharge from the proposed plant is expected to fall within the concept of “main effect” on the environment. This discharge is to be made to a watercourse, the flow of which is described elsewhere in the EIS as “a trickle”. Due to an absence of relevant information about the associated impacts of this discharge, the developer was asked in both of the planning authority’s notices of August 2003 and December 2004 to provide additional specified information.

In the response received by the local authority on 25 May 2005, the developer asserts that this information is not a matter for the consideration of a planning authority. However, additional information is then provided. This mainly takes the form of a consultant’s report by QED Engineering Ltd, albeit that the developer also has provided confirmation of the proposed site drainage arrangements and where the discharge point is to be located (see Figure 1 in the QED Report).

QED Engineering undertook one round of flow measurements at four locations in the proposed watercourse which is to receive this discharge (see Figure 1 of the report) on 4/3/05. At the discharge point itself (Location 2 on Figure 1), the flow rate was estimated to be 0.0035 m^3 per hour or on average 0.0102 m^3 over the stretch of the stream measured (see Table 1 of the QED Report).

This flow assessment confirms the description of the flow as being a "trickle" in the original EIS. No further information is provided on the stream, albeit that physical dimensions on width and height have been provided (see Table 1 of the QED Report).

For the purpose of assessing the main effects of surface water discharges, these discharges will be assessed under the following categories:

a) Process effluent
b) Surface water run-off
c) Discharge from on site wastewater treatment plant

3.6.1. Process Effluent

Page 72 of the original EIS indicated that an average of 4.8 m^3 per hour of wastewater is to be discharged from the plant to the ditch/watercourse. In some circumstances it is envisaged that greater quantities will be discharged, with a balancing tank being proposed to control high flows.

Rather than repeating the figure of 4.8 m^3 per hour, Table 2 in the report by QED which was submitted in May 2005 identifies the sources of process effluent discharges. However, the total quantity of the discharge - either during "normal" or "abnormal" operations – is not clear.

3.6.2. Surface water run-off

In summary, a key effect of any new built-development on the hydrology of a catchment is to cause rapid increases in surface water flow during times of rainfall, thus increasing the peak flood load into any nearby watercourse. However, this issue appears not to be recognised in the EIS or in the supplementary material relating to the Killycarran development. Instead, the assessment seems mainly to be based on average annual surface water volumes, which takes little regard of peak flows and any associated consequences (e.g. flooding).

Overall, the surface water runoff estimated by the developer indicates an annual volumetric increase of 15%. However, it would seem that the volume calculation used is potentially misleading, as the fraction (percentage) of the pervious and impervious areas are used to multiply the annual effective rainfall.

A simple calculation can demonstrate this issue volumetrically:

Total area of the development:	28,328 m^2
Proposed impervious area	9,510 m^2
Mean annual rainfall	1,150 mm/y
Evapotranspiration	450 mm/y
Effective rainfall	700 mm/yr

If a runoff coefficient of 0.3 is used for the greenfield areas with an equivalent figure of 1.0 applying for the impervious areas, then the annual surface water volume before and after the development would be:

V (before development) = 0.3 * 28,328 * 700/1000 = 5,949 m^3
V (after development) = [0.3 * (28,328 – 9,510) + 9,510 * 1] * 700/1000 = 10,609 m^3

Hence it follows from the above calculation that the volume of surface runoff will be increased from 5,949 m^3 to 10,609 m^3: an increase of approximately 78%.

From the material contained in the report by QED submitted in May 2005, the dimensions of the receiving ditch/stream are given (see Section 6, Table 1, page 3). It is indicated that the ditch has a top width of approximately 0.5 m and natural depth of 0.7 m. If it is assumed that

the ditch has a nearly vertical side slope, the cross-sectional area would be approximately 0.35 m^2.
If the channel bed slope is estimated to be 1 in 500 (0.002) and the Manning's roughness coefficient n is 0.4, then the flow carrying capacity of the ditch would be approximately 350 l/s.

Even if the ditch has approximately 0.2 km^2 of catchment area up to the discharge point, then the 50 year return period flood would cause a flow of approximately 370 l/s. This means that, in its natural condition and without any additional flows, the ditch has insufficient capacity to convey a 50-year return period flood. It follows that, with the increased surface water contribution from the proposed Killycarran development, the ditch would be flooded at even shorter return periods, particularly if no adequate surface water attenuation facilities are provided within the development site.

This analysis would suggest that the developer's statement - to the effect that "The introduction of surface water to a stream/river is not problematic once it is clean" quoted in the second paragraph of Section 5 - might well be viewed as significantly underestimating the flooding issue.

Turning now to whether this wastewater discharge will have any environmental effect, Section 1 on page 2 of the QED Report summarises the requirements of the surface water-related elements of the County Council's notice, repeating the planning authority's requirement on the developer to "provide a full and adequate assessment of surface water discharges" and to provide a "full and adequate assessment of the implications of the water discharge… , which should set out the effects of the heightened flow-rate to the environmental downstream of the facility".

Presumably, Section 5 of the QED Report (page 13) – which has the heading "Assessment of Water Discharges from the Site" – is a response to the planning authority's request. This section concludes by stating (para. 1, page 14) that, in respect of the surface water discharge from the plant "it is not considered that there are any negative effects of increased surface water flow from the site to the environment downstream of the facility". However, the reasoning behind this seems not to be well substantiated. Indeed, the only environmental effect mentioned is erosion at the discharge point. What seems not to be made clear concerns matters such as whether the discharge channel is capable of receiving the discharge, the nature of the environment downstream and how it will be affected by the significantly enhanced flow envisaged. Naturally, this means that any flooding risk remains un-assessed. Overall, the assessment of the surface water contribution from the proposed development and its impact on adjacent and downstream ditches/streams remains inadequate, despite two requests from the planning authority for this issue to be clarified and substantiated.

3.6.3. Domestic Wastewater

Section 6 of the response by the developer received in May 2005 adequately addresses the treatment of domestic wastewater proposed to be generated on site.

3.7. Landscape Impacts

The notice dated 1 December 2004 from Monaghan County Council indicated that the landscape impacts of the Killycarran development are likely to be significant. Despite its significance, the EIS and the material sent by in the developer prior to May 2005 did not address this matter, particularly in respect of impacts on local properties.

The documentation received by the County Council on 26 May 2005 contains a report by Cunnane Stratton Reynolds Ltd (CSR). This report describes both day-time and night-time impacts and is a significant addition to this EIS.

In respect of the receiving environment for the development, the CSR Report provides a comprehensive assessment in accordance with the relevant guidelines of the Irish EPA and the UK Landscape Institute. The conclusion of Section 2 that the landscape sensitivity of the receiving environment is "medium" seems appropriate.

However, the conclusions reached in Section 4 with regard to the potential landscape impact do seem somewhat open to debate. While it appears correct to assert that the landscape is already in a period of transition due to the restructuring of the agricultural sector, the scale of the Killycarran development is of an entirely different order to intensive chicken or mushroom farms. Such structures, while large, tend to be low-rise and hence have a relatively minor localised impact in the undulating drumlin landscape.

Overall, it seems that the proposed development presents such a radically different vertical scale that it cannot be considered to be just another example of the transition to more capital-intensive forms of rural enterprise. The magnitude of the change should therefore be described as "significant" and "uncharacteristic" in the context of the receiving environment. Having said that, unlike intensive farm enterprises, a plant such as Killycarran is likely to be a one-off in this landscape. Hence the overall impact on the landscape of County Monaghan as a whole can probably be classed as "neutral".

In terms of the potential visual impact of the development, some further concerns arise. These relate to Section 4.2 of the CSR Report, which assesses the visual impact by means of an analysis of the view from 12 selected vantage points. It is not clear from the report whether these viewpoints were chosen in consultation with the planning authority; they do not, for example, appear to reflect the priorities set out in the request for further information. Although the impact on adjacent dwellings was of major concern to the planning authority, only two of the viewpoints (11 and 12) are within 1,100 m of the site.

The views from minor roads and from the R186 are more comprehensively addressed. They indicate a low/medium neutral impact. However it could be argued that the viewpoints should have been chosen from within a more limited zone of visual influence based on the height of the boiler house rather than of the stack. This would probably have focussed the analysis on the area to the north and northwest of the site, which may have caused more of the results to fall into the low- to medium-adverse category.

However the analysis does establish quite clearly the benefit of the undulating drumlin landscape in screening the clutter of lower buildings from most of the vantage points. In many cases the only elements of the development which would be visible are the boiler house and stack. These are simple geometric forms which have no obvious scale clues. While they may be conspicuous, they are not discordant features on the landscape.

However the impact of the proposed Killycarran plant could still be significantly adverse for dwelling houses which are close to the site or located on hills within a direct line of sight of the complex. The severity of the impact would be influenced not just by the scale of the boiler house and stack but also by the clutter of subsidiary structures such as the fuel unloading building, fuel silos, and conveyor system.

The conclusion of the CSR Report seeks to discount the impact on individual houses by reference to the "conflicting prioritisation of visual amenity for unsustainable rural housing". However, it seems possible to argue that, although granting permission for further scattered rural housing may now be considered to be unsustainable, the planning process is still obliged to have due regard to amenities of existing dwellings which predated the commencement of the Planning Act or were consistent with national and local settlement policies at the time they were built.

In conclusion, there are some questions with regard to the extent to which the Report on the Landscape and Visual Impact completely addresses the issues raised in the County Council's request for further information. The assessment of the impact on dwellings in the immediate

vicinity of the Killycarran site is not given the required priority and this is reflected to some extent in the choice of the viewpoints for the photomontages and in the relative weight given to the protection of established residential amenities.

As this is a stand-alone visual impact assessment, it does not address the interaction of impacts. The trade-off between the various policy objectives could only be properly considered if the visual assessment was an integral part of a full EIS. While the visual impacts on nearby dwellings may have been understated in the CSR Report, it is considered that they would not be sufficient to warrant a refusal of development consent provided they can be balanced against other benefits associated with the Killycarran facility (such as rural waste management, national energy policies and so on).

3.8. Construction Impacts

Due to the scale and duration of the construction of the Killycarran proposal, it was considered that significant impacts may arise. Given that the original EIS document was virtually devoid of any cataloguing or assessment of these impacts, additional information was requested. A comprehensive response was provided in the form of Section 11 of the report received by Monaghan County Council on 26 May 2005. This response identified impacts and mitigation measures for 12 categories – human beings, air quality, noise and vibration, construction traffic, landscape, soils, geology and groundwater quality, surface water, climate, flora and fauna, cultural heritage and material assets.

It is estimated that construction related traffic will be in the order of 15 HGVs and 45 PCUs with a total two-way peak of 12 PCUs. The total two-way peak assumes that traffic movement to and from the site will be evenly distributed over the 10 hr working day. This assessment did not consider the peak traffic impacts of 45 PCU's movement to and from the construction site in the morning and evenings only. This assessment would identify the actual impact of all site workers travelling to the site prior to the 8.00 am start and from the site post 6.00 pm.

3.9. Power Line Impacts

Additional material on power line construction impacts is set out in Section 10.2.2 of the report submitted to the County Council on 26 May 2005. Two options are presented on page 64, being shown spatially in Figure 10.2.

In FTC's experience, the issue of grid connections is a problematic area in respect of the drafting of an EIS. This is because the ESB is very reluctant to commit itself to cabling routes prior to planning permission for the principal development being issued. Hence this makes embracing the power line routes within an EIS for energy projects difficult, particularly where 38 kV lines are proposed. Usually, indicative alternative routes are set down in an EIS, being subject to a less detailed assessment for the reasons described.

It is perhaps for this reason that the developers decline to assess power line-related impacts at all. Instead, paragraph 6 of page 65 of the report submitted on 26 May 2005 states that these will be assessed at the time when a planning application is made for the actual cabling. It is also stated that a separate EIS will be done for this aspect.

There seems to be some doubt about the veracity of the statement in the material submitted on 26 May 2005 concerning the requirement to draft a separate EIS for the construction of the power lines to serve Killycarran. The reason is that it is not a requirement of the Planning and Development Regulations that as EIS is automatically done in relation to power lines of 110 kV or 38 kV capacities. However, it may be that the statement in the report received by the

County Council of 26 May 2005 is in fact saying that an EIS would be "volunteered" as part of the power line planning application.

3.10. Ash Management

The County Council's notice of 1 December 2004 made clear that the original EIS and the response to the first notice issued by the local authority in August 2003 does not adequately cover the issue of ash management. There were also other significant issues, particularly concerning the unclear fly-ash to bottom-ash ratio, vagueness about disposal routes, how much might be defined as hazardous waste, and so on.

The response received from the developer on 26 May 2005 indicates that between about 40-54,000 tonnes of ash will be produced, of which about 19,000 tonnes will be fly ash and 29,000 tonnes is bottom ash[2]. The developers assert that the ash is subject to European Waste Catalogue (EWC) codes 10 01 01, 10 01 03 and 10 01 15. There is also no mention of an EWC for any fly-ash that might arise.

Possibly, the EWC codes used in the EIS and in the supplementary material arise from the developer's mistaken belief that this development constitutes a power station rather than a waste incinerator (see above). However, if this project is viewed as an incinerator, the relevant EWC codes for the ash would seem to be 10-01-15 (bottom ash, slag and boiler dust from co-incineration other than those mentioned in 10-01-14). No EWC code has been identified to classify fly ash production.

What then becomes significant is the discussion on page 95 of the material submitted in May 2005 as to whether at least some of this material is defined as hazardous waste. None of the EWC codes used by the developer relate to hazardous waste and it is also asserted on page 103 that the fly ash would not be a hazardous waste; however the developers indicate that this would only be definitively decided once the facility is in operation (see first two lines of page 104). In essence, this issue turns on whether the ash contains what the EWC terms "dangerous substances", if it does, then the relevant material would be classified as hazardous waste.

Possible outlets for ash disposal / reuse were discussed, such as, landfilling and landfilling capping, use in the manufacture of cement and other construction activities and as a fertiliser. However it is unclear from the information supplied which of the aforementioned disposal/ reuse option the developer intends to use. The response failed to consider the impact of the possibility that fly ash from the proposed facility would be classified as "hazardous" and if so, the appropriate options for its management.

Overall, while the developer appears to have utilised incorrect EWC codes, the material submitted on ash volumes (etc) is significantly better than that contained in the original EIS. However, the developer has not clearly identified the intended disposal/reuse sites for the management of ash.

3.11. Accident-related Impacts

Due to its nature, this matter is covered in the next section in relation the discussion of the mitigation measures set out in the EIS.

[2] The proportion of bottom ash to fly ash is reported as being in the ration of 40:60. This is equivalent to approximately 19,000 tonnes of fly ash or 2.3 tonnes per hour on the assumption of working 8,200 hrs per year (95% online availability) and not the stated 2,300 tonnes per hour indicated in the supplementary material to the EIS. Likewise, the production of bottom ash is predicted to be approximately 29,000 tonnes per annum or 3.6 tonnes per hour and not the stated 3,600 tonnes per hour.

4. A DESCRIPTION OF THE MEASURES ENVISAGED IN ORDER TO AVOID, REDUCE AND, IF POSSIBLE, REMEDY SIGNIFICANT ADVERSE EFFECTS

4.1. Human Impacts

The material submitted in the light of the two notices from the County Council and in the original EIS for the Killycarran facility set down a significant number of mitigation measures which address some – but not all – of the main environmental effects of this development on human beings. The outstanding issues fall readily within the other headings in this report and are summarised at the end. For this reason, they are not repeated under this heading.

4.1.1. Traffic Impacts

To cater for the increased traffic movement associated with the operation of the proposed facility, the applicant is proposing that approximately 7 km (request for further information submitted May 2005, Section 4, pg 3 MOR report) of minor roads be upgraded/widened.

The environmental impacts associated with widening the identified roadways are not adequately in this EIS. No specific mitigation measures – such as hedgerow replacement – appear to be contained in the EIS for Killycarran whilst the submission received on 26 May 2005 can not in any way be said to comprise a response which satisfies the requirements of the notice served on the developer to provide the requisite details of the environmental impacts of road improvements.

Furthermore, it is inappropriate to suggest that the impacts on other environmental issues e.g. archaeology, ecology, surface water quality etc associated with the proposed road widening would be subject to professional assessment at the appropriate time – (request for further information submitted May 2005, Section 4, pg 11 MOR report).

4.2. Stack Emissions

The EIS for the Killycarran proposal contains an extensive description of the emission abatement arrangements proposed. This includes data on the height of the stack itself. However, as noted earlier, this material all would appear to be founded on incorrect assumptions concerning the allowable emission limit values for a plant of this type. The result is that the applicant has failed to demonstrate that the processes proposed to be contained within the Killycarran facility will be able to meet the stringent standards set out in the EU's Directive on Waste Incineration. That being so, it is difficult to see how this development can be acceptable on environmental grounds.

Moreover, in respect of the stack height, the applicant has stated (in Sn. 5.4.3, pg 39 of the report submitted to the Planning Authority in May 2005) that "In determining the acceptable stack height for emission points, it must be based on the objectives of providing adequate pollutant dispersion without creating any undue visual impact". However, the applicant does not seem to provide data to show that a minimum stack height of 50 m was required for dispersion purposes. In the absence of this data, it may well be that a smaller stack would have also provided adequate dispersion and be less visually obtrusive.

This is evident in the results of modelling presented, whereby maximum ground level concentrations of pollutants calculated from a 50 m stack are at fractions of the ambient air quality guidelines.

4.3. Odour Emissions

Odour emissions are adequately addressed in the report submitted to the Planning Authority in May 2005.

4.4. Noise Emissions

The County Council's notice of 1 December 2004 indicated that the assessment and mitigation of noise in both the construction and operational phases was inadequate in the EIS for the Killycarran proposal. In response, the report received by the County Council on 26 May 2005 provides further information on noise impacts and mitigation.

In respect of both construction-related and plant operation noise mitigation measures, a series of proposals are set out on Pages 50 and 55 of the developer's report. These are described as "recommended noise preventative and mitigation measures" (page 50) or mitigation measures that are "recommended" (page 55). By the use of the term "recommended" in this context, it is obvious that this is not a commitment by the developer; rather it seems to be recommendation from the developer's consultant to the developer. In this respect, the EPA's Guidelines on Environmental Impact Statements (Section 2.3.1) suggests that developers should accept all mitigation measures proposed and that such proposals should be enforceable undertakings.

Clearly, these recommendations do not constitute any undertaking by the developer to put in place these mitigation measures. Having said that, virtually all of these can be enforced as planning conditions.

4.5. Surface Water Discharges

As noted earlier, the discharge of water from the proposed Killycarran facility is likely to constitute a "main effect" or a "significant environmental affect"; certainly it cannot be regarded as trivial. However, as noted above, the effects of the discharge on the environment do not appear to have been assessed. Consequently, it is difficult to evaluate whether the mitigation measures proposed are adequate. Hence only a few items of the material submitted by the developer to the planning authority can be highlighted at this stage.

It is identified in QED Engineering report submitted in May 2005 (Page 10 of Section 6) that process effluents will contain ammonia, phosphorus, $Fe(OH)_3$ – MnO_2, Ca, Mg, NaCl, citric acid, EDTA, NaOH among other constituents. However, this material does not clearly identify how process effluent will be treated prior to discharge to the receiving surface waters. Neither are the proposed treatment standards to be achieved set out nor is any attempt made to show or determine that the receiving water has adequate assimilative capacity.

Secondly, the material submitted in May 2005 includes a comparison made with a similar plant in Scotland whereby all process effluent is discharged to a sewer system. However, a very significant distinction between this Scottish plant and the Killycarran facility seems apparent. In the Scottish case, wastewater is discharged into a sewer and not to a surface water receiving system. Given the differences in the sensitivity of the receiving waters, there seems to be some considerable doubt as to whether this comparison is appropriate.

While the additional material submitted in May 2005 mentions a balancing pond, what seems not to have been determined in any detail are the measures that are proposed to ensure that this discharge is contaminant-free (see above) or those which will ensure that the discharges will not impact on the receiving water. The capacity of the balancing pond to contain process wastewater produced on site has not been determined. The developer acknowledges (see QED Engineering report - Section 6, page 13) that "problems can arise at a discharge point when habitat at that point is altered as a result of the introduction of pools of water at this location". However, no mechanism is proposed to avoid this impact occurring and no assessment is made on the impact of increasing water flow onto the ditch/stream due to this surface water discharge. The developer has not proposed any measures to mitigate the flood risk from surface water run-off from the site.

4.6. Landscape Impacts

The County Council's notice dated 1 December 2004 indicated that there was significant confusion in the EIS in respect of on-site landscaping, with differing sections proposing incompatible or inconsistent mitigation solutions.

The response received from the developer on 26 May 2005 contains significant additional material relating to site landscaping. It includes a report by Cunnane Stratton Reynolds Ltd, which contains a landscaping plan for the Killycarran site (Drawing No 05041). This rectifies the earlier confusion about the location of site security fencing – which appeared to overlap with screening bunds – by confirming that this will be placed inside the screening bunds.

What seems clear is that the very large structures associated with the Killycarran development cannot have their landscape impact totally mitigated. However, the drumlin-like topography of the surrounding environment does achieve this to some degree. Also contributing to visual impact mitigation are proposed screening berms; albeit that the height of these is not clear. Finally tree planting is also proposed as a way of reducing local visual impact, but for obvious reasons this will only come into effect some years after the development has been finished and also will be seasonal.

While the visual impact on adjacent properties would be mitigated to some extent by these proposals, consideration should also be given to using subtle differences in the colour and texture of the external finishes to distinguish between the taller structures which will be seen against the skyline and the lower structures which would be seen against the backdrop of the other buildings and the surrounding vegetation.

Overall, if the planning authority is satisfied that the proposed Killycarran plant is acceptable on all other grounds, then it would seem that the proposal should be permitted notwithstanding the adverse visual impacts on a limited number of dwellings in the vicinity of the site. If this is the case, the conditions imposed in any grant of permission are recommended to include comprehensive mounding and landscaping to partially screen the lower structures. It is also recommended that revisions to the colour and external finishes of the lower structures are made in order to distinguish them from the boiler house and stack.

4.7. Construction Impacts

In the notice dated 1 December 2004, Monaghan County Council stressed the need to provide general information on construction-related impact mitigation, as well as some specific information on the intentions regarding the off-site or on-site management of overburden and rock, surface water impacts and so on.

A number of construction-related mitigation measures are set down in the supplementary information submitted to the local authority. Moreover, a materials balance has been provided in the information submitted in May 2005 (Section 11, p 88), which indicates that excavated materials with be re-used on-site.

Where they arise, issues concerning construction-related mitigation measures have been discussed elsewhere in this report. For this reason, they will not be duplicated here.

4.8. Power Line Impacts

110 kV or 38 kV grid connections are proposed. These will be attached to the national grid within 12 km and 800 m respectively of the facility. Given this context, and also the fact that assessing environmental impacts of this issue is difficult, given uncertainties about the requirements of the ESB and that a separate process of development consent applies to these elements, there seems little to add here in respect of a discussion of mitigation measures.

4.9. Ash Management

In its submission of May 2005, the applicant describes possible outlets for ash management for both disposal and recovery but fails to identify any specific sites.

While this description is somewhat sketchy, it has to be acknowledged that it is difficult for any applicant to definitively identify the sites to be used for incinerator ash disposal/recovery. Inevitably, the situation will change in the intervening period under which statutory approval is obtained and the site is constructed. Moreover, outlets for ash of this nature will be dependent on commercial considerations and also detailed – and plant-specific – composition studies of the ash arising from the actual combustion process. However, it is noted that the applicant indicated in the original submission that ash disposal was proposed at Scotch Corner Landfill, Co. Monaghan.

4.10. Accident-related Impacts

The material submitted to the County Council on 26 May 2005 provides new information on firewater retention arrangements. This included a fire water retention study, which is contained in Section 13.

The fire water retention study indicates that approximately 707 m^3 of storage capacity is required for firewater retention. This capacity is based on a fire-fighting event of 90 minutes duration. The location of the fire water retention pond is shown on Figure 3 of the Risk Assessment Report and Risk Management Programme (RAPRMP).

What is notable is that the fire water study indicates that this retention pond may accept processed water, while Section 6 of response received in May 2005 indicates that this pond is also proposed to act as the sole process water holding facility. What seems evident is that it is not apparent from the RAPRMP report that this proposed pond has sufficient capacity to contain both process water and fire water simultaneously. It follows that, in the event of a fire at the facility, the applicant has not demonstrated that this pond has the capacity to hold both process effluent and used firewater. The result is that concerns arise as to whether there might be overflow from this pond in a fire event.

5. AN OUTLINE OF THE MAIN ALTERNATIVES STUDIED BY THE DEVELOPER AND AN INDICATION OF THE MAIN REASONS FOR HIS OR HER CHOICE, TAKING INTO ACCOUNT THE EFFECTS ON THE ENVIRONMENT

5.1. Site Selection and other forms of alternatives

How alternatives are to be considered in an EIS is an issue that is often challenging to developers and those required to draft such statements. On the one hand, this is mandatory information: see Article 94(a) of the Planning and Development Regulations 2001 and para. 1(d) to Schedule 6 to those regulations. But on the other hand, there are practical limits to how far this discussion can go. What is clear from Schedule 6 to the 2001 Regulations is that what needs to be covered are the main alternatives and that the main reasons behind whatever was selected by a developer should be presented in an EIS. Moreover, other constraints arise for projects such as Killycarran as, unlike a local authority, a private developer does not have compulsory purchase powers which, in theory at least, would otherwise permit access to any desired site in Ireland.

In Section 2.4.3 of the Guidelines of the Information to be contained in Environmental Impact Statements, the EPA acknowledges that alternatives present challenges to those writing an EIS: "… it is important, from the outset, to acknowledge the existence of difficulties and limitations when considering alternatives". What the EPA terms "non-environmental factors" affect this issue and may have an "overriding importance to the developer". Examples given by the EPA include project economics, land availability, engineering feasibility and planning considerations.

Section 3.2.2 of the EPA EIS Guidelines summarises what is covered by the concept of "alternatives". It indicates that the requirement in the legislation to discuss alternatives "serves to indicate the main reasons for choosing the development proposed" and that alternatives have three aspects: alternative locations, alternative designs and alternative processes.

In a project such as Killycarran, it is FTC's experience that issues to do with land ownership and availability significantly affect the scope of the consideration of alternatives. This is also acknowledged in the EPA Guidelines, being expanded upon under the heading "Site Specific Issues" (see page 13 of the Guidelines).

In the Killycarran EIS, the issue of alternatives is dealt with in more than one way (see pages 27 et seq. of Volume II). Firstly, there is a discussion on what might happen to the feedstock of the plant if the development does not go ahead. This is followed by a very short consideration of anaerobic digestion and electricity generation as an alterative thermal process to what is proposed. A lengthy section (Section 1.4.2) then is made up of a consideration of the merits of non-thermal processes, such as composting and landspreading.

The next section of the Killycarran EIS (Section 1.5) considers the important issue of site selection. Although not embraced by the section headed "Alternatives to the Proposed Development", an extensive discussion on alternative sites is found under the heading "Site Selection". A series of site selection criteria are set out and different sites are then discussed.

For the reason that certain internal consistencies arose in the developer's discussion of alternatives, both notices issued by the County Council demanded that further information is submitted.

While the response to the first request from the local authority for additional information to be provided was somewhat sparse, the second response elucidated additional material in the form of Section 2 of the material submitted to the County Council in May 2005. However, much of this discussion concentrated on the traffic issue.

In conclusion, any assessment of the alternatives-related material contained in the original EIS and in the supplementary information is coloured by a number of factors:

(a) the national legislation, having particular regard to the use of the word "main", which appears twice in the relevant paragraph to Schedule 6 to the Planning and Development Regulations (see above);
(b) the EPA's EIS guidelines;
(c) the constraints developers face in relation to the site selection process;
(d) custom-and-practice in the drafting of EIS documents;
(e) that it is apparent that the text supplied in the original volume of the Killycarran EIS does not really do justice in providing a complete and cogent explanation of the actual site selection methodology used and portrayed in the relevant figures and tables.

Having regard to all of these factors, the overall conclusion is that the discussion of alternatives in the EIS for the Killycarran project is not so fatally flawed as to constitute a potential reason for the planning authority to consider rejecting the development on such grounds.

6. CONCLUSIONS

Since the EIS for the proposed Killycarran facility was submitted, the developer has received two notices from the County Council requesting the submission of additional information. While the response to the first notice was insufficient, significant additional information is contained in the subsequent report received by the County Council on 26 May 2005. What seems clear from both of these responses is that the developer has significant reservations about whether a local authority is entitled to receive this information, despite the reasons being explained in some detail in the County Council's notice of December 2004. Fortunately, the developer has endeavoured to comply and, as noted, significant additional material has been submitted. The question then arises as to whether this material is sufficient and, particularly, what should be done when, despite explicit requests for specified material from the County Council, there remain gaps in the information provided by the developer.

The analysis set down earlier in this report on the nature of the duties of a local authority in respect of an incomplete or sub-standard EIS points to a number of key issues. Once a planning authority has decided what the significant environmental effects or main impacts of a proposed development are, it is then incumbent on that authority to ensure that adequate information is provided so that a full and complete assessment of these impacts can take place. This requirement is also partly motivated by the context and audience for an EIS, with a key objective of the process being to provide comprehensive material so that the merits of a proposed development can be debated in an informed manner in the public domain. That this is the position has been confirmed by the legal judgments cited earlier in this report.

In respect of the material submitted for the Killycarran project, the analysis above suggests that a large number of the issues raised by the County Council in its notices have been responded to. However, it also has to be said that some others remain outstanding. This is regrettable for the reason that, despite being asked to do so, the developer would appear to have declined to provide information in respect of some issues which either constitute the main effects of the Killycarran project or are those which are associated with significant environmental effects.

In summary, the key outstanding issues concern:

1. that the EIS for the Killycarran project has been founded on predicted atmospheric emission levels from the plant stack which fail to meet national and EU emission standards;
2. a significant absence of information about both the environmental effects of surface water discharges from the plant into the receiving waters and also details of relevant mitigation measures;
3. the developer's proposals for road widening, which not only appear to cause significant road safety issues to arise but which have not had their environmental impacts assessed at all.

At this juncture, it has also to be said that none of the above problems relate to new issues that have not been raised with the developer previously. Indeed, both the view expressed by the County Council in its notice and the developer's response are juxtaposed by the developer in the replies to both of the County Council's notices. Hence it cannot be said that some aspects of a complex question have been inadvertently missed.

On the matter of the correct emission limit values for the stack emissions, the 2004 notice from the local authority contained not only a full copy of the legal wording of the exclusions that would cause the laxer emission standards in one of two EU Directives to apply, but also the explicit requirement that any claim by the developer that poultry litter constitutes "vegetable waste" must be substantiated. The notice then stated that, in respect of these exclusions, "it needs to be emphasised that this important issue must be fully and comprehensively justified, hence you may wish to obtain independent legal advice on this matter". Despite this, the developer continued to assert that the exclusions apply, and that the laxer air emission limits pertain to Killycarran. As noted earlier, this has never been FTC's view. And this position has been recently confirmed by a letter received by Monaghan County Council from the Environmental Protection Agency.

In respect of surface water impacts, these were stated to the developer as being considered by the County Council as falling within the concept of a "main effect" of the development, and it was explained that the national legislation required that all main effects need to be documented in an EIS. Accordingly, it was stated that the "requisite full details and an adequate assessment of the receiving capacity of the watercourse" that is to accept site discharges is to be provided. Further on, the notice stated that a "full and adequate assessment of the implications of the water discharge should be provided, which should set out the effects of the heightened flow-rate to the environmental downstream of the facility". However, this issue seems not to be adequately addressed in the material received by the County Council in May 2005.

In relation to road widening, the developer was required to detail exactly what was proposed and was explicitly requested to document all "environmental and other impacts" arising from these proposals. As noted above, the road widening proposals do not seem to include the widening of key local bridges. Moreover, in relation to the request to provide an assessment of the environmental impacts of road widening, the developer responded by the statement that "the impacts of other Environmental issues, e.g. archaeology, ecology, surface water quality, would be subject to professional assessment at the appropriate time". In respect of ecology in particular, it is very difficult to conceive of a time more appropriate than one that is within the envelope of the consideration of an EIS.

Accordingly, the inescapable conclusion of this analysis is that, even with the supplementary material submitted by the developer, the Killycarran proposal is associated with significant environmental effects of an unknown or uncertain magnitude. The most pertinent of these concern atmospheric emissions, aquatic discharges and road-widening issues. Given that the developer has failed to demonstrate in any meaningful way what these impacts are or how they are to be mitigated, **it is recommended that this development is to be viewed as not being acceptable on environmental grounds.** Moreover, the developer's road-related proposals, if put into practice, would seem to cause significant difficulties to arise which relate to road safety. Hence it is also recommended that **traffic safety is also a ground for refusal to grant planning permission.**

6.1. Suggested Wording of Planning Authority's Decision.

Decision: to refuse permission for the proposed development based on the reasons and considerations set out below.

1. Development of the kind proposed would be premature due to existing deficiencies in the road network serving the area of the proposed development, including considerations of capacity, width and alignment which render the network unsuitable to carry the increased road traffic likely to result from the development. While proposals for road improvements have been made in respect of this development, they still would not render the road network suitable for the traffic expected to be generated.

2. The proposed development would endanger public safety by reason of traffic hazard. It is considered that, notwithstanding the road improvements proposed by the developer, the nature of these improvements and the additional traffic generated by the development would interfere with the safety and free flow of traffic and would endanger public safety.

3. Having regard to Sections 256 and 257 of the Planning and Development Act 2000, the resulting amendments to the Environmental Protection Agency Act and Waste Management Act and in particular Sections 98(1A) and 54(3A) of those Acts, the development would be prejudicial to public health. The developer has not demonstrated that the proposed development will achieve the national and EU emission limit standards which pertain to atmospheric emissions from the discharge stack.

4. Having regard to Sections 256 and 257 of the Planning and Development Act 2000, the resulting amendments to the Environmental Protection Agency Act and Waste Management Act and in particular Sections 98(1A) and 54(3A) of those Acts, the development would seriously injure the amenities of property in the vicinity. The developer has not clearly demonstrated in the environmental impact statement how water discharges from the development are to be mitigated, what the environmental affect of these discharges would be and how flooding would be prevented.

5. The environmental impact statement for the development does not comply with the requirements of the Planning and Development Regulations 2001. The developer has not submitted adequate and sufficient information about the environmental effects of surface water discharges from the plant into the receiving waters and details of relevant mitigation measures. The developer's proposals for road widening have not had their environmental impacts assessed.