This document is designed to inform the Planning Committee of those issues which have been raised during the life of the Project and have not been fully addressed in any other document put before committee. Some issues are not pertinent to the consideration of a Planning Application but are there for information and completeness.

Summary

2. Consultation

3. Project Size and Visual Impact

4. Fuel Issues

5. Transport Impact

6. Noise and Light Emissions

7. Project Emissions to Air & Water

8. Odours

9. Technology

10. Peninsula Power’s Status as a Developer

11. Environmental Impact Assessment & Other Studies

12. Non Specific General Issues
Summary:

Consultations with stakeholders and other interested parties have taken place from 1998 to date, opponents to the scheme claim they have not been consulted; reference to the Chronology in Section 2 below will dispel any such assertion. It is true the consultations have not always been effective in passing factual information, particularly when faced by a concerted vitriolic unprincipled campaign of opposition with associated press coverage.

The project is claimed to be too large/massive/out of scale, the facts do not support such assertions. Planning Guidance under PPS22 describes acceptable project sizes and the Winbeg project fulfils this criteria. The main requirement for a Biomass Power Plant site is that it should be as close as possible to its source of fuel; this criterion is obviously met in the case of Winbeg, being centred within some of the most productive land in UK for growing the required Miscanthus energy crops.

The biomass fuel required for the project will be sourced from within a 25 mile radius of the site. Bical, the leader of PPL’s Producer Group, has re-assessed the area of land needed to grow the Miscanthus energy crop, based on yield data from existing plantations within the 25 miles; and has reduced the required area by over 15% from that quoted in the Planning Application. Sources for the balance of biomass fuel have been assessed and PPL are confident sufficient material is available to meet the project’s requirements at the target prices set in its financial studies.

Cellulosic Fibre (CF), one of the preferred fuels, is not currently being produced locally. PPL’s selected supplier of CF has commenced the processes necessary to build a number of production facilities in the South West, he has assured PPL that these will be built irrespective of the outcome of the Winbeg planning application, based on a buoyant and growing market for CF. Once this material becomes available locally it will take its place within the Winbeg fuel mix, subject to price and Contract.

Transport of fuel to the project has been the subject of considerable speculation. Peninsula Power is satisfied that its Logistics Studies are based on reliable data. It is reassuring that independently, the Environment Agency’s Biomass Environmental Assessment Tool (BEAT) when used to assess the Winbeg project, revealed similar delivery quantities and vehicle movements.

The Devon County Council’s Highways Department has assessed the impact of the additional transport on the local road network using well-established objective methods. It considered the proposal using both the number of vehicle movements provided in the Environment Statement and the numbers suggested by the objectors. Using either set of numbers the Highways Department has said that the impact will not be excessive and the road network is suitable and adequate for such additional traffic.

The TDC Environmental Health Department required the predicted noise emission levels from the project to be below a level at which Receptors close to the site would have a justifiable complaint under Statutory Nuisance. This has resulted in a debate between the Noise Experts about which is the most appropriate ‘Standard’ by which
such noise limit levels should be set. Peninsula Power contends that such a debate is
irrelevant from a planning perspective as the assessed plant noise signature satisfies
the Statutory Nuisance limits, and this has been confirmed by the EH Department.

Operational emissions to air of the Winbeg project were assessed within the
Environment Statement and “Additional Information”. The effect on air quality is
rated as ‘low’ or ‘insignificant’. These conclusions have been confirmed by the
Environment Agency and the TDC Environment Health Department assessments.
To summarise: the emissions of air pollutants from the operational plant and
associated traffic will be insignificant.

The only water emissions ‘off site’ will occur during exceptional storm conditions. At
all other times rain and process wastewater will be collected, stored and re used in the
process. During exceptional storm conditions, the existing airfield drainage system
will be used to discharge the excess rainwater to local watercourses, the airfield
drainage system has carried out a similar role without problems for over 60 years.

The processes used at Winbeg and the fuel and its storage regime are designed to
avoid any possibility of odour generation. Fuel stored outside such as Miscanthus bale
stacks and wood log piles do not inherently emit odour. All other fuels will be stored
dry inside the reception barn prior to use.

The technology proposed for the Winbeg Project is claimed by opponents to be
unproven and “Experimental”. PPS 22 sets the technical and financial feasibility of a
chosen technology outside the remit of the planning system, but notwithstanding this
fact, the following should be borne in mind: Any process that has independently
verified results covering over 20,000 hours of successful operation cannot by any
objective assessment be considered experimental. The incorporation of the FERCO
SilvaGas technology into a Biomass Integrated Combined Cycle (BIGCC) Power
Plant configuration is certainly innovative. Such developments should be encouraged
not condemned. The UK has an enviable record of successful applications of advance
technology in innovative projects in many fields of endeavour, Peninsula Power is
confident the Winbeg project will join these ranks.

The opponents of the project claim Peninsula Power has not the experience and ability
to successfully prosecute the Winbeg project, due principally to having no experience
in Biomass Electricity Generation. The whole Renewables Industry is less than 14
years old, and the Biomass sector even younger. The industry is very open; all the
participants welcoming networking and learning from each other’s experiences.
Peninsula Power is active in the appropriate trade associations and other technical
groups, assessing the huge knowledge base now available and where appropriate has
incorporated it into the Winbeg project. PPL has available in its advisory team, world-
class specialists supported by staff from leading international power plant
manufacturers. As a principle, proven equipment working within its design envelop,
has been incorporated into the overall design. Where unique equipment or
applications have been incorporated, a risk assessment has been carried out and fall
back solutions developed to minimise the overall project risks.
It is claimed that the Planning Application, the supporting documentation and associated background studies, are inadequate if not deliberately misleading. This claim is not supported by the submissions from the Statutory Consultees, as the experts in their fields, who all accept the documentation as professional, informative, adequate in scope and fit for purpose (informing them and the Planning Authority as to the overall impacts of the project).

Peninsula Power has allowed these documents to be scrutinised by the DTI, the National Audit Office and members of the Trade Association, the consensus view is that PPL has prepared one of the most professionally produced, comprehensive and detailed Planning Applications so far in the Renewable Industry, a benchmark for others.

PPL also intend to use the information to support the post planning due diligence scrutiny required by our equity partners and the Project Finance Banks.
2. Consultation

2.1 It is said Peninsula Power has not met the requirements of PPS 22 as they have not consulted with the Local Community:

PPS22 was published by ODPM in August 2004; the Winbeg planning application was made in October 2004 after a gestation of eight years. It is not reasonable to apply the consultation framework of PPS22 retrospectively to a project that has been so long in development, and from the wording such application was never intended. However, as can be seen below the developers of Winbeg have adopted a policy from inception of wide-ranging discussions, and consultation with local communities.

Chronology of Consultation:

i) Between 1998 and 2002 a number of confidential and informal briefing sessions were held with various local and national opinion formers outlining the proposals for a Bioenergy Project at Winkleigh. In August 1998, the developers met the then Chairman of Winkleigh Parish Council, the TDC Councillor for the area, and a director of Reynolds Boughton to advise them of the Winbeg proposals. They were kept informed informally until mid 2002.

ii) On three occasions in the three years preceding the Winbeg DTI grant application, Winkleigh Parish Council (WPC) was approached with a view to a private briefing aimed at seeking advice on community involvement. WPC declined on every occasion, but they were aware of the proposals because the owner of the original site was a WPC councillor and had told members privately what was afoot.

iii) In August 2002, whilst the DTI grant application was being prepared, PPL received a visit from the then chairman of the Winkleigh Society (WS), Roy Cooper. He had been referred to Roger Barton by Torridge District Council following two years of discussion between TDC and WS about a 33MW (net) biomass combustion plant to be sited on Winkleigh airfield. Another developer had shown interest but withdrew after realising that PPL had a purchase option on the land and intended to pursue a competing development. Mr Cooper was given a detailed private briefing, and later reported back that he had discussed the proposals with WS management team, who had agreed to support PPL ‘in any way they could’. This liaison continued right up to the public briefing in iv) below. We were advised that a substantial amount of community consultation/involvement had already taken place, and this was directly relevant to the Winbeg project. (Three days prior to the public meeting in iv) below, Mr Cooper told PPL that the continued support of WS was conditional upon the Winbeg project being transferred to ‘their piece of land’. Transfer was not feasible due to PPL’s level of commitment in its own site; it would appear that this was the watershed which swung WS from supporting to protesting against the Winbeg project.)

iv) The DTI announced the BECGS grant award for Winbeg via a press release on 3rd April 2003. PPL immediately issued its own detailed press release – which created much public interest, and approached Winkleigh Parish Council with an offer to make a public presentation. This was accepted, and done at a WPC meeting on 28th May 2003, attended by about 60 local residents. A detailed
presentation of proposals was followed by a long Q&A session involving councillors and public.

v). On 4th July 2003 WPC, under the guidance of Devon CC Rural Regeneration Service (Keith Brown), convened a public meeting with PPL, expressly to consider the liaison between PPL and the local community. This meeting was attended by about 150 members of the public. PPL participated enthusiastically, and made numerous proposals, which were minuted. The meeting then voted to set up the Winkleigh Community Working Party (WCWP) to act as the conduit for Consultation and information dissemination to all residents and businesses in Winkleigh. Its membership included representatives from local interest groups and businesses on the Airfield. Formal written communications took place throughout the remainder of 2003 and early 2004, during which time WCWP posed questions in writing, and PPL answered them where possible (i.e. if information was currently available).

vi). During October 2003 PPL produced, and in Jan-Feb 2004, distributed its Information Leaflet to over 13,000 homes and businesses within a ten-miles radius of the Winbeg site.

vii). The WCWP disbanded itself in early February 2004 issuing a ‘press release’ saying it had completed its remit, even though the agreed consultation programme had not been completed, and the Environmental Impact Assessment (EIA) had not been started.

viii). On the evening of the 7th February 2004 Peninsula Power met Winkleigh Parish Councillors at PPL’s Lapford Office for a wide ranging discussion preceded by a project presentation and followed by a Q&A session.

ix). A Public Meeting was arranged as part of a scheduled Winkleigh Parish Council Meeting on 28th April ‘04 it was attended by some 150 members of the community. There was a wide-ranging Q&A session and open forum.

x). February ’04 PPL initiated its Website, as agreed at the 4th July 2003 meeting - see v) above. The website included an e-mail contact facility, and a page for listing FAQ’s.

xi). February ’04 Project Environmental Impact Assessment Scoping Exercise was completed with Torridge District Council following a consultation exercise led by TDC with all Statutory Consultees and other stakeholders. The Winkleigh Society submitted a report of approx 50 pages with concerns and suggestions, many of which were taken up by PPL in the ES and review of the project.

xii). Environmental Impact Exercise (EIA) was completed in August ’04 and Environmental Statement published, including posting on the PPL website together with other important surveys.

xiii). Formal Planning Application for the project made 15th October 2005

xiv). From 22nd to 29th November 2004 a series of ‘Road shows’ comprising Public Exhibitions, Seminars and Open Forums were held in seven locations in Winkleigh and contiguous parishes to explain the detail of the Planning Application. These events displayed information about changes and improvements made to the project design and layout as a result of community involvement, and the EIA process.

Design Improvements Resulting from Public Consultation
- Freestanding Chimneys eliminated
- Gasifier building ‘smoothed’ and tidied
- Hi-tech cladding for Gasifier building
- Improved water management
• Improved landscape screening (mound)
• Better noise attenuation measures
• Enhanced wildlife measures
• Reduced on-site fuel processing
• Fuel densification leading to traffic reductions – fewer HGVs

xv). August and September ’05, two packages of ‘Additional Information’ in support of the Planning Application were supplied to TDC at their request and made available to the public on the PPL website. Representatives of the Winkleigh community sent detailed comments to TDC, on this and every other occasion.

xvi). Throughout the period from February ’04 to date: Whenever possible and appropriate within resource limitations, factual replies were produced to letters received directly by PPL or published in the local press from concerned members of the public and local businesses. We have however declined to respond to insulting, personally disparaging and/or outrageous claims and comments.

xvii). Independent studies on various aspects of the Project have been carried out by such bodies as the National Audit Office and others in the last two years, the results, if made public, have their Web Links added to the PPL website.

3. Project Size and Visual Impact

3.1 It is said that the Winbeg Project is of a monstrous size.

The Companion Guide to PPS 22 (Technical Annexe, P89) states:

“Paragraph 42: In the case of a larger electricity generating plant, a medium sized industrial building of two-storey height will be required, with a slender chimney of 25 or more metres in height. A Dutch barn scale building may be required for on-site storage of fuel, and additional buildings for offices and workshops may be required. An extensive area for lorry manoeuvring will be needed. Typically, a 1.5MW plant producing electricity using gasification technology will require a site area of some 0.5 hectares and a 40MW plant may require 5 hectares (12.4 acres)”.

So the Winbeg plant is in accord with what PPS 22 leads people to expect. Nowhere does PPS 22 indicate that the scales mentioned are deemed extraordinary.

By comparison with all Fossil fired Power Stations the WINBEG Project is a very small. A typical coal fired power plant would occupy a site of at least 250 acres, and have an output measured in 100s of MW.

Elean Power Station near Ely in Cambridgeshire has been compared with Winbeg. The plant is designed as a 31MW (net) summer time and 38MW (net) winter time output plant and is located on a 15 acre site. The plant consists of a 30m high boiler house a single free standing chimney 45m high, two fuel storage and reception barns, a steam turbine generator building and a large
forced draft dry cooling tower (approximately 40m x 20m x 18m high). Fuel is sourced from a radius of up to 40 miles.

Winbeg occupies 8.5 acres (3.5 Ha) and has an output of 23MW. Winbeg’s output is optimised to meet the DTI Biomass Energy Capital Grant Scheme requirement of a minimum electrical output of 20MW with a fuel conversion efficiency of not less than 36% based on an input fuel moisture of 35%.

During the development of the project it was found that a plant with this output on the Winkleigh Airfield site had considerable advantages from a sustainability perspective, as well as benefiting from economies of scale. The sustainability aspects refer to the size of energy crop (fuel) catchment area (25 mile radius), with suitable land available for cultivation of such crops close to the site which minimises transport cost and environmental impacts. The Winbeg output enables some economies of scale, which are reflected in a good potential return on capital employed, whereas smaller output plants are finding it difficult if not impossible to generate sufficient returns to make them viable.

3.2 It is said that the Winbeg Project is out of scale with its surroundings.

Also, see previous item, PPS 22 comments.

The plant site of 8.5 acres is less in area than the Reynolds Broughton factory (13 acres). The buildings on site, with the exception of the gasifier building, are not much higher and have no larger footprint than those which form the workshops at Reynolds Boughton. All these buildings will be completely hidden from view from the A3124 (a distance of about 400metres) behind the site landscaping mounds topped by native trees and shrubs and the addition of roadside hedge banks.

The top 1/3 of the gasifier tower will be visible; this building will be clad in translucent polycarbonate, an interesting material which has the characteristic of allowing the building to blend into the background by letting the light & colour to pass through it, this significantly softens the outline when viewed, greatly minimising its visual impact when compared with a solid clad building.

The translucent cladding was included for aesthetic reasons. The concept is to provide a material which, whilst providing weather protection and screening to the machinery inside the structure, would not appear bulky or solid. The corners are all rounded and the surface is smooth, and there are no details like fixings to give the scale. The appearance will also change with the time of day as the sun moves round, producing graphical shadows of the building’s contents on the inside of the cladding. On dull days the grey colour and translucency will merge the structure with the background of the sky, and thus not be a sharp and ‘hard’ surface. These devises will also help to decrease the apparent bulk of the structure and soften the visual impact. See Figure 1 in 3.3 below.
3.3 It has been claimed that as the Project is being built on one of the highest points between Dartmoor and Exmoor, it will be clearly visible from 30 miles away.

The airfield site, located to the northwest of Winkleigh village, can be seen from an ordnance survey map not be one of the highest points between Dartmoor and Exmoor. Winkleigh village itself is actually at a higher elevation although the village is on the south side of a hill, which hides the airfield from the village.

Winkleigh Church Tower is about 8½ miles from the northern extremities of the high moor on a facing hillside, and is almost as tall as the WINBEG gasifier building but at a higher elevation. The church tower cannot be identified from Dartmoor, if it could be found it would appear less than half an inch high to the naked eye.

The airfield cannot be seen at all from Exmoor.

From vantage points to the south, west, east and north the view is similar in character to that from the A3124, but due to the increased distance from the site, it is of less significant visual impact. To the southwest of the site for a distance of about ½ to 1½ miles, the site and its buildings will be partly visible from a valley and the associated east-facing hill. Once over the crest of this hill it is again hidden.

Photomontages showing these views are included in the Environmental Statement, Volume 5, accompanying the Planning Application. These photomontages show the landscaping mounds but do not include - and therefore are not intended to represent - the additional and increasing screening provided by trees and shrubs when planted on the sides and top of the mounds. Also they do not include the new A3124 roadside hedge bank to be constructed along the length of road where it traverses the airfield. The effect of the trees on the landscaping mounds can be best judged by looking at photomontage figure 9; the tree screening can be seen in the foreground (beyond the hedge). It should also be noted that the gasifier building is shown in the photomontages in the Environment Statement as if it were solidly clad rather than clad with polycarbonate; the advantages of the latter are discussed in 3.2 above.

Figure 1 below is of the same view as photomontage figure 9 mentioned above and contained in the Environmental Statement, this photomontage has been developed to show the benefits of polycarbonate cladding on the gasifier building from a visual impact perspective against the cloud cover.
3.4 The Winbeg scheme is far too big for the area; it would cause considerable environmental damage and blight many people's lives, it is a project of the wrong type and size of development in the wrong place.

To replace the Winbeg output with smaller plants of for example 5MW would require 4-5 plants in the same area. A 5MW plant of conventional design would require a site of about 4 acres. Therefore the total site requirements would be in the order of 20 acres compared to the Winbeg site of 8.5 acres. Plus as the energy conversion efficiency of such plant is about half that of Winbeg, to produce the same output as Winbeg there would a need for a doubling of the planted area of energy crops and a similar doubling of lorries carrying this fuel.

The location of the plant at the disused Airfield at Winkleigh; minimises the number of residential properties affected by the development. The site is located on a man made plateau with higher ground to all but the immediate southwest, which minimises its visual intrusion. Peninsula Power has also included a comprehensive landscaping scheme in its proposals to screen the plant locally.

The Government DTI Bioenergy Capital Grant Scheme BECGS, Priority 2 under which the Winbeg Project qualified and received an allocation of £11.5M, payable on completion of the project, requires the plant to be, “Of advanced conversion technology for electricity generation, capable of further development with a minimum output of 20MW at a conversion efficiency of at least 36% based on an input fuel moisture of 35%”.
The Winbeg project has a design base of 23MW output with a conversion efficiency of 37%; using this information our plant of 23MW will have an input requirement of 62MW of energy from the fuel (23/0.37).

If a smaller plant, say 15MW plant were substituted it would have to use combustion technology, rather than an advanced gasification, the extra capital costs of the gasification equipment at that scale would make a 15MW plant economically unviable. The conversion efficiency of a 15MW combustion plant of this size is 25%. Its input energy requirement is therefore 60MW (15/0.25). This means that such a plant would require just 3% less fuel than Winbeg!

The Winbeg plant can use Cellulosic Fibres, a fuel derived from the biomass fraction of sterilised Municipal and Trade Solid Waste. The Winbeg project is scheduled to consume some 28,000 tonnes each year of this excellent fuel – which qualifies fully under UK and EU legislation as a renewable fuel.

A combustion plant, due to the rules of the Renewable Obligations Scheme, cannot qualify for the enhanced electricity price for any electricity it produced using cellulosic fibre. This means that such a plant would require a further 27,000 tonnes of biomass (28,000 less 3%), if this was all miscanthus a further 2200Ha of land would be required to grow these crops.

If plants of 3 or 5MW size were to be considered, their conversion efficiency falls to the range 18 to 20%. The maths are simple but the message is clear, 5x5MW or 12x2MW plants will require proportionally even more fuel and a bigger area of energy crops to be planted.

The inevitable conclusion from the statements above is that Winbeg is the most economical and technically appropriate project located on an ecologically beneficial site.

3.5 It is claimed that Winbeg will have a Negative Impact on Tourism:

The assertion that visitors are going to be concerned that a “Green” Bioenergy facility exists in the area is illogical. A visitor from say, Manchester, when booking his holiday near Winkleigh is not going to ask, “Is there a Biomass Power Station there?”

It is Peninsula Power’s contention that there is no connection between building the Winbeg Project and the attractiveness of the area to visitors. Moreover, there are potential positive tourism effects that can be identified.

Coming back to our visitor from Manchester, if he happens to catch sight of the gasifier building during his time in the area, he may say to his host, “What is that building?” When told it is a new “Green” Power Station he may decide to find out more and Peninsula Power is considering a visitors centre. Far from having a negative impact it could actually have a positive impact.

As this project is a ‘pathfinder project’ using advanced technology it will be certain to attract experts from far and wide to learn from our experience, again a positive impact.
The extensive landscaping proposals and the construction of the freshwater storage lagoons will provide a range of new habitats available thereby greatly improve the biodiversity in and around the area of the site. PPL intends to encourage study of these sites by local schools and other interested groups.

4. Fuel Issues

4.1 It has been claimed that the heavy wet clay soils in the 25-mile radius around Winkleigh site are unsuitable for growing Energy Crops such as Miscanthus.

A large area of Miscanthus is now being grown within 5 miles of Winkleigh; this crop is for rhizome propagation, and does not reach mature yield levels (3/4 years) as it is lifted two years after established. The yields actually achieved here and at all the sites currently under cultivation within the 25-mile radius confirm the estimates used by PPL in its fuel strategy study, and also the maximum of 5,300ha required as crop growing area.

(Bical has stated recently that they expect to produce the required tonnage from about 4500 Ha of crop growing area.)

4.2 The quantity of Energy Crops required cannot be grown within the 25 mile, limit of Winkleigh.

Without marketing, by December ’05, growers have expressed willingness to Contract to cultivate sufficient energy crops (miscanthus) within this 25-mile radius to provide nearly 15% of Winbeg’s total fuel requirements. The supply schedule demands 25% of our fuel from energy crops by the end of 36 months of commercial operation and 55% by 60 months. This amount of early, unsolicited interest confirms the confidence PPL have in their fuel supplies strategy. Bical has a signed Contract, which includes a binding clause requiring it to produce all the said tonnage within the 25 miles radius.

4.3 It is said that yields for Miscanthus have been published and quoted for Miscanthus grown at Buckfastleigh and Somerset, both outside the 25 mile radius but not for more local plantations within the radius, the conclusion is said to be that this is because the yields within the radius are much lower and put into question PPL’s ability to source its miscanthus within this radius.

The reason for quoting the Buckfastleigh and Somerset yields is these crops have been extensively studied and the yields independently assessed. The crops within the 25 mile radius are being grown for rhizome production for future propagation, this process results in the crop being lifted before they reach mature yields (mature yield takes 3 to 4 years from planting). Nevertheless the yields obtained before lifting for rhizome splitting are considered to be at least of the same order as those produced when the Buckfastleigh and Somerset crops were at the same stage of maturity, BICAL have used this information in calculating the area of energy crops that will be needed to service Winbeg, see 4.1 above.
4.4 **Planting Miscanthus will destroy the character of the Devon countryside.**

Peninsula Power has agreed to ensure that Miscanthus is not grown in Designated Areas (i.e. statutorily listed areas of natural, landscape or wildlife value) or County and Local Wildlife sites. In addition, growers cannot obtain Defra establishment grants for energy crops proposed in Designated Areas. (Applications are automatically ‘flagged’ to reveal such information on the Defra database.)

Miscanthus is similar to Forage Maize, when viewed from a few hundred metres away; even farmers cannot distinguish the crops. The growing of Forage Maize (over 10800 Ha in Devon at present) has not resulted in protests about visual intrusion. The picture below shows Miscanthus growing in the countryside and was taken by a Devon County Council Representative in October 2005.

![Miscanthus](image)

4.5 **Devon is the northernmost extremity for growing Miscanthus putting into question the yield estimates.**

Miscanthus is being grown successfully – with commercially acceptable yields - at Blair Gowrie 16 miles north of Perth in Scotland, some 500 miles north of Devon. As indicated in 4.1 above the yields actually achieved in Devon confirm and exceed the projections used in the PPL fuel supplies strategy.
4.6 **Planting Miscanthus in the quantities required will result in a monoculture in the area.**

The area enclosed within a 25 mile radius is just under 500,000ha (2000 square miles), the area required under cultivation for Winbeg energy crops is less than 5000ha (20 square miles)[<1%]. To be more specific, Miscanthus will only be cultivated under Contract to PPL on current arable land and temporary grassland within the 25-mile limit this amounts to just over 60,000ha meaning 8.3% is needed under miscanthus, this cannot by any objective criteria be regarded as a monoculture. See earlier comments re Bical estimates etc in 4.1. All farmers are obliged under the EU Agricultural rules to allocate 8% of their total acreage to set-aside, a far larger area than required to grow the energy crops for Winbeg.

4.7 **It is claimed in wildlife terms Miscanthus does not support the biodiversity that makes Devon an important wildlife resource.**

The extensive body of data being accumulated by Defra and other groups indicates that Miscanthus usually has a positive – and at worst, a neutral effect on biodiversity. There are no reported pests in Europe that have significantly affected the production of Miscanthus. This and other associated production benefits such as perennial growth are why the crop has a low chemical input requirement. For more details of biodiversity see: Tzehaye Semere & Fred Slater, (Feb 2005) THE EFFECTS OF ENERGY GRASS PLANTATIONS ON DIVERSITY. Final Report, published for the DTI, Contract B/CR/00782/00/00 URN 05/1307. Contractor; Cardiff University. **Conclusions from the above study are:** Because perennial rhizomatous grasses require a single planting and related tillage; and because the crops are harvested up to March and the land is not disturbed by cultivation every year, these fields were used as over-wintering sites for birds, also by small mammals and invertebrates suggesting immediate benefits to biodiversity. These results clearly demonstrate that perennial biomass grasses grown as an energy source have a positive effect on biodiversity and can benefit native wildlife.

Also see Additional Information, Submission 9.9.05

4.8 **It is claimed that building Winbeg will deprive other smaller biomass projects of fuel thereby inhibiting their development.**

It is factually incorrect to suggest that other smaller plants might be deprived of biomass as the unused fuel already available in the region is far in excess of that required to achieve the set target of 141Mw total of biomass energy projects for the region.

4.9 **It is also claimed that “The construction of Winbeg at 23MW as an electricity generation facility will be to the severe detriment of other smaller biomass combined heat and power plants, the latter being far**
more sustainable due to both their smaller fuel transport radius requirements and the fact that less fuel is required per useful unit of energy produced (electricity and heat). Smaller plants are much more suitable for placement close to the heat consumers”.

A full explanation of the impact of the construction and operation of a number of smaller output schemes has been rehearsed in 3.4 above and the difficulties surrounding CHP and viability are covered in 9.2 below. The final sentence although true ignores the fact that 24/7/365 heat loads just do not exist without which small scale CHP is not economically viable. In the case of Heat only plants, the current capital costs of about three times that of an equivalent fossil fired boiler unit make them uneconomic except in exceptional circumstances, where fuel is available free, say a sawmill or furniture factory.

It should also be emphasised that size for size, the smaller sized plants conversion efficiencies for the electricity part of their output, are less efficient than Winbeg (less advanced technology) thus the overall transport impact would be more vehicles rather than less on the roads.

4.10 Cellulosic Fibre, it is said that this is experimental fuel.

PPS 22 places the sourcing of fuel for renewable energy outside the remit of the planning system (see PPS 22 Companion Guide, P89, paragraph 43). Notwithstanding this, the following should be borne in mind:

To qualify as a renewable fuel under the UK Renewables Obligation 2002, Cellulosic Fibre must be 98% biodegradable material. The separation out of the biomass from MSW and similar waste streams has taken place for many decades; the only difference with the process used to produce Cellulosic Fibres is the imposition of a sterilisation stage before separation, using an Autoclave, a well proven centuries old technology.

The FERCO SilvaGas Gasification Process was designed specifically to gasify cellular materials, in other words biomass in all its forms, making Cellulosic Fibre an ideal fuel.

4.11 Cellulosic Fibre Production Facilities are unlikely to be built in Devon.

The CF Production facility is not part of the Winbeg Project and is not under the control of Peninsula Power. CF will be supplied under Contract to an appropriate specification.

The CF plant supplying Winbeg will be located in Devon within the 25 mile radius of Winkleigh but not in Torridge District. The preferred supplier has said that Cellulosic Fibre Plants will be built in Devon irrespective of the outcome of the Planning Application for Winbeg. CF has commercial value and a ready and growing market exists for various end uses, as well as there being a ready, plentiful supply of source material.
4.12 It is said that insufficient biomass material exists in the waste stream.

To suggest the constituents of MSW and other waste produced in Devon are significantly different from anywhere else in the UK is illogical. It has been demonstrated in a number of studies by DEFRA and other Government Agencies that the biomass fraction of MSW is in a range of 60 to 85%. Using the lower figure and the fact that every household produces on average of 1 tonne of MSW per annum means that about 42,000 tonnes of MSW would be required; more than two thirds of this amount could be sourced from within any one District in Devon.

Please see the data provided in Fig 1 taken from the Friends of the Earth pamphlet Waste and Recycling:

![Fig 1 (Courtesy of FOE)](image)

Most door step recycling results in the separation and individual collection of newspaper, metal, glass and in the growing season garden waste. As the best Waste Authority recycling percentages in the UK are in the low 20%, including Devon. It can clearly seen from the figure 1 above, the average waste bin contains 25% paper, 9% metal, 9% glass and 11% plastics, if 20% of the average bin is doorstep sorted a significant proportion of the biomass must remain in the unsorted waste stream, fully justifying the 60% figure quoted above.
4.13 It is said that the energy used to produce Cellulosic Fibre from the waste stream is so large as to negate its use as a Renewable Fuel

The biodegradable (i.e. biomass) fraction of MSW and trade/commercial waste is included in formal definitions of renewable energy under UK and EU legislation. The Government appointed Biomass Task Force Report 2005 (the Ben Gill Task Force) strongly supports the use of so called Solid Recovered Fuel (SRF) derived from the waste stream, pointing out the huge quantities of excellent fuel are currently being dumped into landfill sites throughout the country. The Winbeg proposed fuel supply strategy includes the use of Cellulosic Fibre derived from such material.

A production facility for Cellulosic Fibre takes the form of a pre-sorting process to remove very large items, such as furniture and large pieces of timber etc. the remaining waste stream as delivered proceeds to a sterilisation stage which uses an autoclave system to batch treat the material by heating it using steam. At the end of that cycle the autoclave vessel is opened and the then sterile material is discharged into a sorting system which removes all the recyclable and tramp materials into collection bins for disposal. The remainder of the material, consisting of not less than 98% biomass is known as Cellulosic Fibre (CF) - which is an almost dry odourless fibrous floc. In the case of the fuel for Winbeg, CF will pass to a pelleting densification plant before being loaded onto Lorries for transporting to Winbeg. The whole of the production facility is housed in a factory sized building of c.48,000 sq. ft (240x200), sealed to avoid untreated fugitive emissions to atmosphere.

The energy used to produce CF from a waste stream is between 1 & 1.5 GJ/tonne, and this energy cost includes processing and recovering approx 95% of the raw waste – of which the CF is about 2/3 (the remainder is metal, glass, plastics etc all of which will be recycled). Each tonne of the floc contains an average of 19GJ of energy. Therefore, it can be seen that this is a very efficient way of producing an excellent fuel for a Bioenergy Plant such as Winbeg.

4.14 It is suggested that insufficient forestry waste is available to supply the quantity of additional biomass required during the early years of operation

A recent study carried out for Regen SW “Small Scale Wood Fuel Heat & CHP Options for Southwest England, Sept 2004” and presented to the Renewables Futures Conference in Plymouth on the 16th December 2004 concluded that a very large quantity of wood fuel residue is available; what are required are end users and a market for the material. A knock-on effect could be the proper woodland management, as required by the South West Forestry Project Report and other authorities, to the benefit of the ecology of the whole area. Less than 50% of the material available from a harvested tree is currently used, this huge unused source of Biomass only needs a market. The Biomass
Fuel Assessment included in the Winbeg ES confirms a plentiful supply of unused acceptable material for Winbeg and other projects.

5. **Transport Impact**

5.1 *The Fuel Transport estimates are not accurate*

The fuel requirements have been analysed in detail for each year up to year 6 when 55% of the fuel will be provided by Miscanthus (Energy Crops). Discussions have taken place with haulage companies who regularly carry similar materials in the West Country to ascertain typical loads carried by their vehicles, discussions have also taken place with Norboard to confirm the details supplied by hauliers of wood waste transported into their plant with particular reference to vehicle size and average loads carried. Using the above information the number of loads required per day were calculated and fed into the fuel logistics part of the Environmental Statement and the Fuels Supplies Strategy Document, which supports the Planning Application. We believe the research - which supports the assumptions on fuel loads - is robust and will stand any scrutiny. In addition PPL continues to explore ways of reducing the transport required, by densification of the fuel prior to transportation including the pelletisation of Cellulosic Fibres. The objective being twofold; economic and environmental, as well as reducing the transport impacts still further. The Environment Agency BEAT Model includes calculations for fuel transportation as delivery Lorries per week; the output from this model confirms PPL’s claimed figures. The Model automatically derives these numbers without using any PPL supplied information.

5.2 *The use of Lorries to transport fuel to Winbeg and the burning of fossil fuel (diesel) and the resulting pollution negates the “Green” credentials of the project*

If this were true, every biomass project would negate its green credentials, by reason of Winbeg being the most efficient conversion technology available at present. The Winbeg plant will save an estimated 140,000 tonnes of CO$_2$ emitted to the atmosphere per annum when compared to the same amount of electricity being produced by the latest generation of natural gas fired power stations; this performance exceeds any other biomass project currently under development. This amount, (140,000 tonnes of CO$_2$) would have to be emitted by Lorries transporting fuel to the power station to make the process CO$_2$ negative, an absurd proposition. Putting this into perspective, if every vehicle transporting fuel to the Winbeg Site were to travel a 100 mile round trip, (an unlikely situation as the fuel is sourced from within a 25 mile radius), it is calculated that the whole fleet of vehicles would produce less than 4000tonnes of CO$_2$ when based on the Institution of Road Transport Engineers vehicle CO$_2$ emission tables.

PPL have calculated the energy ratio of the Winbeg Plant as 25 to 30 to 1 (i.e. the plant will produce 25 to 30 units of electricity for every
equivalent unit of energy expended in the life cycle from crop planting to processing at the plant, including transportation). There is a close relationship between the energy ratio and CO₂ savings. Friends of the Earth have calculated the energy ratio of the Winbeg Plant as 55 to 60 to 1, twice our figure. The energy contained within a lorry load of biomass exceeds the energy to transport it to the site by between 60 and 100 times, even allowing for the 37% conversion efficiency of the project this still is 22 to 37 times.

Annual Carbon Dioxide Emissions Comparison Chart

Input/Output Fuel/Energy Ratio Comparison Table

[Energy used to produce and deliver fuel including processing on site compared with energy converted into electricity]

5.3 The additional transport required to support the Winbeg Project will cause unacceptable congestion on the inadequate roads of Devon

Devon County Council Highways Department (DCC HD) have used a well proven and accepted methodology to assess the effects of our additional traffic and have clearly demonstrated that to use their words, “The impact will not be excessive and the road network is suitable and adequate for the additional traffic generated as a result of the operation of the Winbeg project. The A and B road network is at present only relatively lightly used by traffic in comparison with its function”.
DCC have suggested some amelioration measures at certain pinch points under a Planning Condition and PPL is willing to fund such works as specified.

‘Buchanan’ - the “bible” used for assessing traffic by highway authorities suggests the environmental capacity for access or local distributor roads as 300 to 600 vehicles per hour. ES 7.3.1. The A & B roads in the area of Winkleigh are carrying less than 200 vehicles per hour peak flow. Put simply, about 1 in every 100 vehicles on these roads will be a vehicle carrying fuel to Winbeg.

6. **Noise and Light Emissions**

6.1 **It is claimed that the use of noise regulations under Mineral Extraction (Quarrying Regulations) MPG 11 is inappropriate and BS 4142 should be used**

The disagreement over which ‘Standard’ and model to use for assessing the Winbeg Projects noise emission limits, although interesting for experts in the field of Noise, actually does not significantly affect the actual requirement which is to avoid a justifiable Statutory Nuisance complaint from Receptors as a result of the operation of the plant.

The noise emission levels required to avoid such a complaint have been supplied by Torridge District Council’s Environment Health Department. The assessed plant noise signature of the plant has been shown to be below the Statutory Nuisance level!

6.2 **It is claimed that the stream of heavy lorry movements will cause disturbance to local residents and businesses and are not considered in the EIA & ES**

The traffic noise generated by the lorry movements is considered in the ES, Section 9. Section 9.5.24, predicts the increase noise level due to the Winbeg traffic as 0.5dB(A). With an average of three vehicles per hour entering and leaving the site, such an increase in noise level is not considered significant. All noise generated by vehicles starting, stopping and turning within the site boundary, will be masked by the landscaping mounds from all local residences and businesses. The nearest residence to the site, Gekacey Bungalow, has its north boundary wall located adjacent to the car park of D&S Stores, a busy retail business sited to the south side of the Winbeg access road. The noise generated by the ingress and egress to the car park of cars, vans and delivery trucks will be significantly higher due to its proximity to the bungalow, than any additional noise generated by passing Winbeg traffic.

6.3 **It is claimed that the light emissions from the Winbeg Project will destroy the haven of minimal light pollution around Winkleigh**

Peninsula Power has stated publicly and included in the Planning Application that there will be NO continuous external lighting on the site after the daily fuel deliveries have ceased. All external lights will be turned off during the silent hours.
Lighting will be required under health and safety, to allow safe twice-a-shift plant inspection patrols. Most of this lighting will be initiated by proximity switches. To provide lighting for the Security system and cameras, infra red lighting outside the visual spectrum will be fitted.

7. Project Emissions to Air & Water

7.1 It is claimed that the Winbeg plant emissions to air are higher than a conventional fossil (coal) fired plant and also higher than a bio-energy plant deploying conventional combustion technology

To compare plant emission across technologies is fraught with difficulties and the only reasonable way to do this is to ensure the same basis is used and that normal operation conditions rather than tests conditions are applied.

The Environment Agency (EA) sets maximum levels for emissions for all Power Plants, which are detailed in a Permit to Operate provided under the Pollution Prevention and Control Regulations (PPC Regulations). Most of these emissions require the installation of Continuous Stack Emission Monitoring Equipment.

The air quality data provided under the draft PPC application submitted to the Environment Agency and copied to TDC as part of the “Additional Information” are the worst case estimates of emissions (using EA approved methods of calculation and modelling) that the Winbeg Plant will emit, and are likely to be used by the EA to set the maximum levels within the initial Permit to Operate. The EA-approved methods of calculation (including dispersion models) are intended to be conservative and overestimate the emissions. Most plants (and Winbeg will be no different in this respect) are normally able to operate well within the permitted limits. These normally achieved operational levels should not be confused with the Permitted Levels under PPC, nor confused with those calculated as the “worst case” levels as part of a PPC Permit Application as submitted for Winbeg. Breaches of Permit Limits are Reportable Events and an operator cannot try and hide such breaches because they are recorded on the continuous stack monitoring equipment history files.

In the table below, to enable sensible comparisons of emissions to air to be made between the various technologies mentioned above, (a coal fired conventional power plant (Rugeley in Staffordshire), (Elean Power Station near Ely in Cambridgeshire), a combustion fired biomass power plant and Winbeg a (Biomass Integrated Combined Cycle power plant). Normal operational maximum emissions limits have been used for the coal fired power plant and Elean, and for comparison purposes we have used the emissions provided in the “Additional Information” for Winbeg. All have been corrected to the same reference factors - e.g. $O_2$ in flue gas and PM$_{10}$ for dust emissions etc. For clarity in the case of the running plants (Rugeley and Elean) the Permit Limits are shown.
### Emission Limits Comparison (at 11%O₂) ‘Annual average’ values used

<table>
<thead>
<tr>
<th>Power Output (MW)</th>
<th>Winbeg</th>
<th>Rugeley (2x500)</th>
<th>Elean (Winter Output)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO₂</td>
<td>161 mg/m³ (188tpa) (8.17tpa/MW)</td>
<td>- (190,800tpa) (190.8tpa/MW)</td>
<td>300 mg/m³ (-)</td>
</tr>
<tr>
<td>Particulate / Dust</td>
<td>23 mg/m³</td>
<td>33 mg/m³</td>
<td>25 mg/m³</td>
</tr>
<tr>
<td>CO</td>
<td>73 mg/m³</td>
<td>-</td>
<td>500 mg/m³</td>
</tr>
</tbody>
</table>

It can be clearly see, the expected Winbeg PPC Permit Limit Levels are far more restrictive, than those applied to Rugeley and Elean.

It should be emphasised again that the normal Operating Levels of emissions will be considerably lower than the Limit Values indicated in the table above.

The opponents of the Winbeg project have claimed the emissions from the Elean Power Station are significantly lower than those given in the “Additional Information” Air Quality section. For example: Emissions of NOx 95.4 mg/Nm³ compared with Winbeg of 161 mg/Nm³. The fact is they are not comparing like with like! The figure for Elean is a running emission level measured during a specific test under the best conditions (After maintaining the filter bags) whereas the Winbeg figure is the predicted worst emission level! A similar comment applies to the other emissions compared by the protestors.


#### 7.2 It has been claimed that our process will produce Dioxins.

The formation of Dioxins requires a combustion temperature range of 250°C to 400°C, Chlorines and Oxygen plus traces of Iron & Copper and the main constituent Poly Aromatic Hydrocarbons (PAH).

The Winbeg feed fuel mix, including CF, contains only trace quantities of chlorines. There are no measurable traces of iron or copper in the fuel. The only places where the temperatures required exist is within the steam raising unit which is fed with the Gasifier Combustor flue gas or downstream of the Gas Turbine combustion chambers where no PAH exists.


The Environment Agency has stated publicly that they will place a PPC Permit Level “at or below measurable concentrations” as our emission limit for Dioxins.

For comparison, the largest sources of Dioxins in rural areas are from the burning of wood in domestic wood burning stoves and open fires. During the heating season it is estimated this source amounts to up to one third of all emissions of Dioxins.
8. **Odours**

8.1 It is claimed that the Environmental Statement is inadequate in this respect as it does not address Odours

Table 1 of the Environmental Impact Assessment Scoping Report scopes out "risk of odour nuisance from site processes" on the grounds that "fuels will be dry and odourless" and that the "process will not generate odours". Torridge District Council's Scoping Opinion did not question the conclusion that odour impacts should be scoped out of the EIA, but it did draw attention to consultation responses on the issue of odour and odour generation and requested that these questions were adequately addressed within the EIA. The EIA therefore includes an explanation of the significance of odour impacts despite this aspect being scoped out of the study.

The Environment Statement covers the issue of potential Odour Emissions in section **8.7 Operational Emissions** it concludes that the production of odours are unlikely with the Operational Procedures proposed.

The ES recognises the potential of outside storage of biomass to give rise to emissions of odorous substances. PPL will ensure that this potential to generate odorous substances is not realised in practice, through the effective management of the biomass stored on site.

To clarify this point further it should be noted that, The Biomass Fuel Assessment (ES Volume 3) recommends that PPL rotates its buffer (strategic) stock of Miscanthus once or twice a year to maintain the viability of the biomass as a fuel. PPL recognise the potential for odorous substances to be generated through the long term storage of biomass. Under the operational procedures proposed by PPL, miscanthus would be taken from the strategic stock on a first in - first out basis, ensuring that an individual bag or bail of miscanthus would only be stored outside for a period of about five weeks, prior to processing. This procedure, combined with checks on the quality of biomass being received on site will ensure that fuels remain dry and the potential to generate odorous substances is under effective control.

To put this in context and to outline a few principles:

i). For odours to be produced from the Biomass material being used as Fuel at Winbeg, that material must have started to rot. Once that state has been reached a significant reduction in calorific value will have occurred. The whole objective of the process at Winbeg is the efficient conversion of biomass into electricity. The price of fuel is based on its calorific value. To allow it to rot loosing a significant proportion of it inherent heat value would amount to commercial incompetence.

ii). A minimum strategic stock of 10 days use of fuel is held on site. Fuel is only delivered to site five days a week, the remaining two days fuel usage is obtained by recycling the strategic stock, resulting in two days of the strategic stock being replenished every week. A simple calculation shows that all the strategic stock is rotated approximately every five weeks.
“The Statement in the Biomass Fuel Assessment (ES Volume 3) advises that PPL hold a 5,000-bale Miscanthus buffer stock on site permanently, and rotate it only once or twice per year.” This is the opinion of the Consultant as author of the Report and is not how the Operators of the plant will actually manage the strategic stock.

iii). The majority of the fuel stored on site outside the Reception Barn will be as Miscanthus in bale stacks temporarily covered. Bale stacks are a regular feature of agriculture in Devon; bale stacks do not emit odours.

iv). The remaining fuel stored outside the Reception Barn is in the form of round wood logs, many people store logs for wood burning on stoves and fires and know that they do not emit odour.

8.2 It is claimed that the Environment Agency have said our drying process will emit odours

The Environment Agency in their Submission to TDC has said that drying biomass is a potential source of odour. That statement is true when applied to certain types of dryer. The Winbeg Project employs closed loop dryer which exhausts all its vapour into the gasifier unit where it is mixed with the gas stream and is not emitted to atmosphere, thereby eliminating this as a source of odour.

9. Technology

One of the key principles identified in PPS22 (at paragraph 1(V)) is that regional planning bodies and local planning authorities should not make assumptions about the technical and commercial feasibility of renewable energy projects. More technology specific guidance is given in the first Annexe to the Companion Guide. Examples of the issues which are likely to require consideration are given at paragraph 45. These do not include any requirement to carry out any technical viability assessment of the proposed plant.

9.1 It is said that the FERCO SilvaGas Gasification Process is unproven technology and has failed.

The US National Renewable Energy Policy clearly states: “In partnership with DOE (Department of Energy), NREL (National Renewable Energy Laboratory), Battelle Laboratory, Burlington Electric and others, Future Energy Resource Corporation (FERCO) of Norcross, Georgia, was able to build, test and operate successfully the world’s first biomass gasifier system. At the McNeil Power Plant, located in Burlington Vermont the FERCO unit was used to gasify rather than combusting wood chip to power a gas fired boiler. The technology has shown itself to be commercially viable and is being considered worldwide by industries as a way of upgrading inefficient and aging boilers.”
9.2 It is said that the Royal Commission on Environmental Pollution says Combined Heat & Power Projects are preferable to Power Only

The Royal Commission on Environmental Pollution report “Biomass as a Renewable Energy Source” had as its main focus, Biomass as a source of heat and power particularly through the use of CHP (Combined Heat & Power) plants. This report has not been accepted by Government and forms no part of present Government policy.

To use CHP adds to the requirements necessary for a suitable plant site, namely a customer/or customers willing to take a continuous large quantity of heat. To use the potential provided by a CHP plant for high conversion efficiencies it needs the heat load to be 24/7/365. It is obvious that few if any such customers exist outside large urban areas, especially in rural Devon.

A recent study commissioned by Regen SW and presented to the Renewables Futures Conference in Plymouth on the 16th December 2004 concluded that Biomass CHP plants were commercially uneconomic in the South West at present. A CHP plant, if subjected to varying, intermittent or non-continuous heat loads very quickly loses its efficiency advantage over advanced technology power only plants. Also due to the higher capital costs per unit of electricity produced such projects loose any economic advantages, as concluded in the Regen SW study mentioned above.

Winbeg may in due course become a CHP plant if a reliable long term heat off-take can be found in the area, and the infrastructure to use the large quantities of low grade heat can be installed cost-effectively.

This heat was offered publicly to the spokesman for the protestors at a Devon Conservation Forum seminar "The Future of Alternative Energy" at County Hall on the 2nd June 2005. The only reaction thus far is scorn, incredulity and ridicule at such a proposition! See 9.4 ii) below.

9.3 It is claimed that the Winbeg project should not be built because it is not a Bioenergy Power Plant but an Incinerator

It would appear that this confusion has arisen due to the Winbeg Plant having to meet the emissions limits set under the EU Waste Incineration Directive (WID), because Cellulosic Fibre is included as a part of our fuel mix. This application of the emissions rules under WID is known as Co-Incineration. Cellulosic Fibre is derived from the waste stream following a process of sterilisation and separation from the remainder, which is then mostly recycled with less than 5% of the residuals going to landfill.

The EU definition of “Waste” causes perverse outcomes. Once a material is defined as waste it remains waste however pure it is, for example aluminium recovered from waste remains waste even when it is melted down to make new cans. A review within the EU is examining the anomalies thrown up by the current definition of “Waste”.

For a plant to be an Incinerator it must be registered under WID as a waste plant. The Environment Agency has confirmed Winbeg will not be required to be registered in this way.
Peninsula Power has not sought to change the definition of Winbeg, the definition comes from the Environment Agency.

9.4 The Applicants proposition that combined heat and power is a realistic possibility in the future is obviously fallacious

The proposition from Peninsula Power is in two parts:

i). PPL have said, if a heat load can be found that can use the significant quantities of low grade heat available economically, then the adjacent development of such a heat load would be encouraged. An energy park at Winkleigh Airfield was considered early in the Winbeg Projects development stage but was later dropped as uneconomic. These early proposals included a fin fish farm and agricultural glasshouses with the power plant optimised for heat production with electricity as a by-product. The fish farm taking heat during daylight hours and the glasshouses taking heat at night thereby providing a 24/7 demand. The current proposed power plant is optimised for electricity production.

ii). At a meeting of the Devon Conservation Forum "The Future of Alternative Energy" on the 2nd June 2005 at County Hall, PPL offered publicly to discuss with the Winkleigh Society the possibility of using some of the waste heat from the Winbeg Plant as a source of heat for Winkleigh. Mr David Lausen, Chairman of the Winkleigh Society was a speaker at this Forum. The Forum included a Presentation on ground based heat pumps. The author explained that they were economic as a replacement for Oil Fired Heating Systems in “off mains gas” areas (such as Winkleigh). Ground based heating systems use heat from the soil, typically at 70°C. If instead a much larger system took low grade waste heat from the Winbeg Plant at between 25 & 30°C, this would represent a significant heat gain (even with the additional costs of piping systems etc.) representing a good investment for the people of Winkleigh. In Germany and most of the Scandinavian Countries, where District Heating is widely used, heat is pumped up to 30km; particularly in rural areas. Winkleigh Village is 2km from the Airfield.

9.5 It is claimed that Peninsula Power has overstated the Winbeg Plant’s efficiency. It is said that three reports one from Fichtner a second from Enviros and the third from Babtie Fichtner investigating the various technologies available for disposing of unprocessed MSW confirm this claim.

The first report was commissioned by the Environmental Services Training and Educational Trust entitled The Viability of Advance Thermal Treatment of MSW in the UK prepared for them by Fichtner Consulting and published in 2004.

The third report, by Babtie Fichtner entitled ‘States of Jersey Solid Waste Strategy Technology Review’ was published in 2005. These three reports are available on the internet.

All these reports are specifically reviewing various technologies for the thermal disposal of solid **untreated** MSW. The conclusions summarised are: The material is very wet, not at all homogeneous and very difficult to handle as a fuel into anything other than into a normal combustion type incinerator.

Using gasification or pyrolysis technologies for untreated MSW, the pre-treatment of the material before admission to such a unit including shredding and chopping into small pieces plus the necessary pre-drying makes the application of advanced technologies such as these exceedingly complex and difficult as well as uneconomic. The huge quantity of energy expended in these two front end processes result in a maximum estimated overall energy conversion efficiency into electricity of about 30%. There are no additional offsetting financial gains such as those which would arise following the sorting and recovery of recyclable material. Also, as the input MSW is untreated, once the material has passed through the gasifier or pyrolysis unit the resulting ash is contaminated and similar to that obtained from a combustion incineration process and can only be dumped to landfill.

The comparison of the above applications of gasification and the Winbeg project is like trying to compare apples with oranges and about as instructive. (i.e. it is not a like-for-like comparison). Unfortunately, such uninformed comparisons seem seductively simple but like many things the devil is in the detail, and no sensible or objective comparison is possible.

10. **Peninsula Power’s Status as a Developer**

10.1 *It is said that Peninsula Power has no track record as a development company.*

This is beyond the planning remit, and is therefore not a proper consideration in the planning application.

Most Biomass energy companies are still in their infancy. An independent survey for the industry trade association has revealed that it normally takes more than seven years for a biomass renewable energy scheme to reach the point in its development where it can start to build. Most of the current project companies involved in are small and innovative, and like Peninsula Power, have yet to demonstrate a track record in an industry (Renewable Energy) which is only about 14 years old itself.

Peninsula Power has assembled an impressive team of world-class advisors who have and will continue to apply their knowledge and experience to the development of the Winbeg Project. Many of these advisors will join with those appointed by the preferred suppliers of equipment to finalise the design to “sign off” and subsequently assist in the construction and commissioning of the plant. Similarly, specialists will and are being used to develop the fuel supplies infrastructure and logistics.
11. Environmental Impact Assessment & Other Studies

11.1 It has been suggested that the EIA and other major studies accompanying the planning application have not been carried out independently (i.e. at arm’s length from PPL)

The claim that the EIA and the resulting Environment Statement is biased in favour of the project is groundless. The EIA was carried out under the appropriate Statutory Guidance rules and “best practice guidelines” by highly respected consultants, and as can be seen from the conclusions reached, merely sets out the facts without comment that could be construed as giving support.

11.2 It is claimed that the EIA, ES and “Additional Information” is inadequate, if not deliberately misleading

The Environment Agency has written that they have no issues with the Winbeg Planning Application and its supporting documentation and do not object to the Application.
English Nature and English Heritage have in their Submissions now accepted that the information supplied is adequate and have no objections to the Application.
With these expert Agencies supporting the Planning application there can be no grounds for claiming the supporting independent studies are inadequate and misleading.
It is a Criminal Offence to attempt to mislead a Planning Authority by providing a misleading and inadequate EIA. No International Consulting Company would risk their reputation by providing such a document.

11.3 The Environment Agency as Statutory Consultees in their submission to Torridge District Council have suggested that the Flues (following a “rule of thumb”) should be 3m above the height of the gasifier building to ensure emissions are not affected by eddies and downdraft effects

The translucent cladding of the gasifier building has been extended above the top of the gasifier buildings structure as an architectural feature to hide the flues and improve the overall visual appearance of the building.
Clearly this particular case is well outside any standard or ‘rule of thumb’ assessment procedure as there are many aspects which would affect the movement of the gases after leaving a flue. The detailed gas movements in various conditions can probably only be adequately predicted with the use of wind tunnel testing or computer simulation. However we are confident that our design assumptions are sound and as any amendments to the design would therefore be relatively minor, the effects on the Planning aspect would also be minimal. We would therefore test the detailed design assumptions after planning permission has been granted and provide the results to TDC. Our assessment for the design is based on the following.
The Gasifier building is 10m by 14m and composed of a traditional post and beam steel frame which supports the various pieces of equipment. In order to
improve the visual appearance and to provide weather protection for the operators and equipment, translucent cladding is proposed. This commences 5m above ground level and terminates above the top of the steel frame. The highest floor or deck level is 2m below this but most floors and working platforms are composed of open steel grillage construction. Our design has the flues positioned near the centre of the building at least 4m from the edge with the top of each flue on a level with the top of the cladding.

These features would allow air to enter freely at the bottom and travel up the inside of the building past the gasifier chamber. Indeed the heat on the outside of the chamber will positively encourage the air to move upwards by convection. The effect of any wind on the cladding around the top of the building is more difficult to predict. We have assumed for the model that there would be sufficient up-draught air to aid the force of the gasses in the flues and send them clear of the top of the cladding.

One aspect for the testing programme would be the possible inclusion of a deflector. This would be a truncated cone with its narrowest circumference wider than the flue and set around the flue with its top level with the top of the cladding and flue. This would deflect any horizontal wind force upwards and produce a negative pressure around the top of the flue. The upward movement of air coming from the bottom of the building would be channelled into the wide mouth of the cone and in passing the top of the flue would help to draw the gasses upwards at the same time as diluting them.

11.4 SWRDA commissioned ENVIROS Consulting to carry out a Due Diligence exercise on the Project Technology and the Competence of Peninsula Power, The terms of reference for this study and its conclusions are as follows:

“… advice on the technical feasibility of the generating station. In particular, SWRDA needs to know whether the combination of technologies to be used, first to convert the feedstock into gas, then to use that gas to generate electricity, and then to transmit the electricity to the grid has succeeded elsewhere or, if not, whether there is a realistic prospect of it being made to succeed here and on the proposed scale. At present SWRDA has received confused reports of the performance of various possibly smaller experimental stations not necessarily using the particular technologies proposed by Peninsula Power”.

Conclusions of the report:
Does FERCO have a validated gasifier design – YES
Does AMEC have the design and build capability to build the gasifier – YES.
Does BMH/Redler have the capability to design biomass fuel handling – YES
Does Siemens have the capability to provide the power island described – YES
Does Shaw/IDEC have the capability to provide balance of plant and integration – YES
Does the PPL Project Management Team have the skills to complete the project – YES

11.5 It is claimed that the Economic Impact Study is misleading and cannot be relied on as providing an accurate estimate of jobs created and value going into the local economy

The original Economic Impact Assessment estimates for job creation have been challenged by opponents of the project, a subsequent alternative calculation based on the Governments “Green Book” Model revealed a greater
positive impact. The Submission from SWRA as Statutory Consultees chose not to provide any numbers, using the phrase, the Winbeg Project will create substantial additional employment in the area as well as providing significant additional revenue into the local rural economy and diversity for the farming community.

There is no doubt that the WINBEG proposal would be job creating but trying to determine the quantum is clearly, in the end, a subjective judgement.

What cannot be disputed is as consumers every household and business pays their electricity bill a significant portion of that bill is paid to Generators “up country” and is totally lost from the local economy. Once Winbeg is generating the generation portion will be paid to Peninsula Power. Winbeg will spend money in the local economy to provide the goods and services including fuel for the project as well as paying for the salaries of the direct employees, a very significant boost to the local rural economy!

11.6 It is claimed that the Contractors to be used to build the Winbeg Project will not use local people, relying instead on imported labour

Whilst accepting that for some activities Contractors will, by necessity, bring to site appropriate specialists, Contractors in a competitive situation will not expose themselves to the significant extra costs of importing labour, thus it follows that the majority of these general construction jobs will be available to local people.

12. Non Specific General Issues

12.1 It is claimed that because of the remoteness of the Winkleigh Airfield Site Emergency Services will have difficulty in reaching any incident

Winbeg is no different to any of the other homes and businesses in and around the Winkleigh Airfield in this respect, and when compared with say Reynolds Boughton, there are many fewer employees on site at any one time to be exposed to risk of fire or accident.

To deal specifically with the Winbeg development; it includes as part of the design, a fully integrated permanently installed fire system covering all the plant, offices, fuel reception and outside storage areas. Much of the system is automatically initiated with inbuilt sprinkler extinguishing systems, particularly in the fuel reception barn and the offices. It will be backed up by a site wide smoke detection and alarm system. All this equipment will be designed to the appropriate NFPA International Standard as required by PPL’s Insurers.

All the permanent staff employed by Winbeg will have as part of their Contracts of Employment, the requirement to be fully trained in the use of the appropriate fire fighting equipment for their area of work and to be also trained to a minimum of First Aid at Work standard.

There will be a fully equipped first aid facility (Medical Centre) on site.
Preliminary discussions have taken place with local emergency service providers covering the proposals above. They have agreed to assist in the provision of the training necessary to reach a standard such that they can regard the permanent staff as being their first units “on site” in the event of an incident.

12.2 It is claimed that Winbeg uses 30 times more water than a conventional biomass power station (Elean Power Station) [mention previously in 7.1]. It is also claimed that using this quantity of water puts the supplies to all other local consumers at risk.

The Elean Power Station uses a dry cooling tower technology; this cooling tower technology is very temperature sensitive, at Elean it has the effect of significantly reducing the plants output during high ambient temperatures. The proposed Winbeg Project has a hybrid cooling tower (part dry part wet) which is not ambient temperature sensitive but requires a greater quantity of make-up water (lost to evaporation). As the objective is to generate the maximum electrical output, this addition water usage is considered acceptable. The rest of the process uses very little make-up water.

The rain and groundwater collection and storage arrangements for the project are detailed in Section 10.4 of the Environment Statement, these arrangements are designed to minimise the quantity of water required from the mains supply. South West Water have agreed in principle to supply the requirements of Winbeg and have stated that even if required to provide the total site requirements it would not cause any strain on their network or have any noticeable impact on their existing local consumers.