



For the attention of:

Licensing Administrator,

EPA, Johnstown Caste Estate, Johnstown, County Wexford.

Subject: Request for technical amendment to IPPCL P0778-01 for the operation of a single 3KW wind turbine at Janssen Biologics Ireland Ltd.

Please find enclosed three copies of the application documents for Wind Turbine Development at Janssen Biologics, Barnahely, Ringaskiddy, Co Cork. Licence Number P0778-01.

Should you require any further information contact John Lynch (EHS Specialist) at 021-4978324

Yours Sincerely

A handwritten signature in blue ink, appearing to read "Simon Garrett", written over a horizontal line.

Simon Garrett

EHS Manager



For the Attention of:

**John Lynch, EH&S Specialist,
Janssen Biologics (Ireland) Ltd,
Barnahely, Ringaskiddy, Co. Cork.**

Date: - 02.08.13

Subject :- Request for a Technical Amendment to the Integrated Pollution Prevention & Control Licence P0778-01 for the operation of a single 3KW wind turbine at Janssen Biologics (Ireland) Ltd.

Dear John,

As instructed Viridus Consulting Ltd., (VCL) have compiled the data considered relevant for the application to the Environmental Protection Agency (EPA) regarding the Technical Amendment (TA) to the Integrated Pollution Prevention & Control (IPPC) Licence due to the construction of a single three megawatt wind turbine and related infrastructure at the Janssen Biologics (Ireland) Ltd., (JBIL), site at Barnahely, Ringaskiddy, Co. Cork. The site operates under IPPC Licence Register Number P0778-01.

Data reviewed included the Environmental Impact Statement (EIS) completed for the turbine development, the planning application to Cork Co. Council and the draft construction plan documents which are currently being drafted. VCL visited the JBL site and the proposed turbine location on Thursday the 25th of July 2013.

As requested contact was made with the EPA seeking clarification about what information would be required for the TA and VCL were advised to include information on the:

- (1) Details of the Wind Turbine,
- (2) Information on any changes in the sites emissions resulting from the turbine installation,
- (3) Comment on the likely Impacts of any changes in emissions.

It was also recommend that the Executive Summary of the EIS, the Planning Permission and the Planning Report should also be included as part of the TA application information.

The format of this letter report follows the guidance received from the Agency as to what to include in it.

I trust that this is to your satisfaction and I look forward to receiving any comments or edits you may have.

Best regards,

A handwritten signature in blue ink, appearing to read "Darragh Musgrave".

Darragh Musgrave
Environmental Services Manager
Viridus Consulting Ltd.



Contact Details: - Mobile +353 87 650 3582 darragh.musgrave@viridus.ie

Viridus Consulting Limited - Registered in the Republic of Ireland - Number 467958, VAT Number 9501156E
Registered office :- Quintas Partners, Heron House, Blackpool Park, Blackpool, Cork, Ireland.



1.0 Wind Turbine Details

The main features of the proposed development include the installation of a new a single Enercon E101 Wind Energy Converter (WEC), wind turbine with a capacity of up to three megawatts, an associated transformer, buried electrical and fibre-optic cabling, and hard standing area to be used as the crane pad.

The transformer will be housed within or adjacent to the turbine. The turbine will have a hub height of up to 100 metres with a rotor radius of approximately 50.5 metres. It will be of a typical modern design incorporating a tubular tower and three blades attached to a nacelle housing the generator, gearbox and other operating equipment. The WEC model design is gearless so there is little or no oil/lubricant required.

The colour of the proposed turbine will be a semi-matt pale agate grey. The turbine foundation will comprise a reinforced concrete pad. An area of hardstanding (crane pad) will be required adjacent to the turbine foundation to provide a stable base on which to lay down turbine components ready for assembly and erection and to site the two cranes necessary to lift the tower sections, nacelle and rotor into place. The crane pad will remain in situ following construction, in order to facilitate any future maintenance operations which may require cranes. Underground cables will link the turbine to the JBIL facility.

In addition to generating electrical power for the JBIL facility, electricity will also be exported, from time to time to the national electrical grid via underground cabling. Planning Permission has been granted for an operating lifetime of 25 years. The wind turbine operations will be controlled from the JBIL facility and will be operated and maintained in accordance with the relevant Environmental, Health and Safety regulations. The turbine will operate at all times when wind speeds are suitable, with the exception of downtime for maintenance.

Drawings showing the site location and general dimensions of the proposed turbine are presented in Appendix A.

The proposed wind turbine development is one of a number of wind energy projects proposed by the Cork Lower Harbour Energy Group, (CHLEG), of which JBIL is a member. The Group's renewable energy plan will comprise a total of four wind turbines installed throughout the Ringaskiddy area, with each turbine generating power for the site it is located on. The completed EIS looked at the JBIL turbine together with the effect of all four turbines in combination with each other.

The EIS for the proposed turbine was issued in 2011 and planning permission for the turbine was granted by Cork Co. Council (CCC) in February 2012, following an appeal to An Bord Pleanála (ABP) final permission was given for the turbine in December 2012. The Executive Summary of the EIS is presented in Appendix B and the planners report with the CCC and ABP planning permission documents are presented in Appendix C.



Contact Details: - Mobile +353 87 650 3582 darragh.musgrave@viridus.ie

Viridus Consulting Limited - Registered in the Republic of Ireland - Number 467958, VAT Number 9501156E
Registered office :- Quintas Partners, Heron House, Blackpool Park, Blackpool, Cork, Ireland.

Sonja Smith

From: Pamela McDonnell
Sent: 19 January 2015 16:43
To: Sonja Smith
Subject: FW: Follow-up on Janssen TA refusal Reg P0778-01

I think this means you can go ahead and complete that TA refusal!

Thanks a mil

Pamela

From: Dara Lynott
Sent: 19 January 2015 16:29
To: Pamela McDonnell
Subject: RE: Follow-up on Janssen TA refusal Reg P0778-01

Pamela
Thanks for that, your response adequately address the questions I raised in the approval memo.

Regards

Dara

Dara Lynott
Deputy Director General
Environmental Protection Agency

From: Pamela McDonnell
Sent: 19 January 2015 16:11
To: Dara Lynott
Subject: Follow-up on Janssen TA refusal Reg P0778-01
Importance: High

Dara

Apologies for the delay in getting back to you on the TA refusal memo for Janssen Biologics (Ireland) P0778-01. I only received your follow-up questions today, as attached.

To recap, this TA request related to the installation of a wind turbine on a licensed site in Ringaskiddy. You asked the following questions on your decision form:

Can you check if 1) a TA is needed in the 1st place as it is not directly related to the activity 2) What our Air Guidance note on wind turbines says about the matter?

The noise impact from wind turbines is different to standard industrial noise as it has varying noise levels with wind speed, and it also varies in relation to monitoring requirements. *The Agency's Guidance Note on Noise Assessment of Wind Turbine Operations at EPA Licensed Sites (NG3)(June 2013)* therefore requires that the

following Proposed Cumulative Site and Turbine Noise Limits apply where a wind turbine is installed within the licensed boundary:

Daytime: 55dBLAr, T

Night-time: 45 dBLAeq

Wind turbine noise not exceed 45 dB LAeq at any time, or to contain any significant tonal components.

These cumulative limits account for both the site and turbine noise. They apply at noise sensitive locations (NSLs) and/or at the site boundary. It should be noted that the limits do not apply to individual noise sources.

The current contains the standard noise limits only in Schedule B.4: Noise Emissions as follows:

Daytime dB(A) L _{Aeq} (30 minutes)	Night-time dB(A) L _{Aeq} (30 minutes)
55 ^{Note 1}	45 ^{Note 1}

Note 1: There shall be no clearly audible tonal component or impulsive component in the noise emission from the activity at any noise sensitive location.

Therefore the noise limits in the licence need to be replaced with the proposed cumulative site and turbine noise limits.

The licence also needs to be amended to accommodate the monitoring requirements of NG3. These requirements include that the licensee should undertake verification noise measurements within 12 months of the installation of the wind turbine in accordance with NG3 requirements, and that such measurements should be repeated as required by the Agency.

While these changes could be carried out by TA, the fact that appropriate assessment was required at planning stage pushes it into a licence review, in accordance with appropriate assessment procedures.

Please give me a call if you would like any additional information or further clarity.

Thanks and regards

Pamela

6841

For inspection purposes only.
Consent of copyright owner required for any other use.



2.0 Changes to emissions due to the Turbine

2.1 Emissions to Air

The proposed turbine development will reduce the JBIL facility's dependence on energy generated by the combustion of fossil fuels. It is expected that the use of electricity from fossil-fuel based generation will be reduced by between 30% and 50%, and it is estimated that the CLHEG's total annual CO₂ emissions will be reduced by approximately 3,600 tonnes per turbine, (Source EIS Section 2.2.2).

In line with Condition 7 of the IPPC licence JBIL strive to achieve efficient use of resources and energy in all site operations.

It is envisaged that emissions to air from the boiler stack North of CUP Building at points A1-1, A1-2 and A1-3 will reduce due to the commissioning of the wind turbine.

There will be no changes to the IPPC Licence air emission limits due to the wind turbine development but it is expected that emissions will reduce giving carbon dioxide emission benefits locally and globally.

2.2 Emissions to Water

Currently all rainfall at the proposed turbine location falls on hardcore and percolates to ground. As part of the wind turbine development surface water runoff from the construction area will be controlled and diverted to settlement ponds before being collected or if clean being allowed to percolate to ground. There will be strict controls on excavated soil and fuel handling and machinery movements during the construction phase which will be supervised by the JBIL project and environmental teams and their representatives.

The Enercon E101 WEC has a gearless motor design and therefore the amount of gear oil and lubricants used by it are extremely low to negligible. An internal drip tray and containment system in the turbine nacelle means that any hydraulic fluids or oils that may leak from the motor are contained in the turbine housing. These trays are checked during the routine maintenance and management of the turbine. Therefore there are no operational risks of contamination from the system and no drainage controls are considered necessary. Rainfall runoff from the concreted turbine base will be low due to its small size and water will be allowed to percolate from it and from the crane hard standing area naturally to ground.

There will be no new emissions to or changes to the IPPC Licence water emissions due to the wind turbine development.



Contact Details: - Mobile +353 87 650 3582 darragh.musgrave@viridus.ie

Viridus Consulting Limited - Registered in the Republic of Ireland - Number 467958, VAT Number 9501156E
Registered office :- Quintas Partners, Heron House, Blackpool Park, Blackpool, Cork, Ireland.



2.3 Noise Emissions

Chapter 9 of the EIS assesses in detail the potential for environmental noise and vibration impact of the proposed wind turbine at JBIL. Compliance with guideline noise limits is assessed based on the cumulative wind turbine noise levels, assuming that all four wind turbines are installed by the CLHEG. Account was also taken of cumulative industrial plus wind turbine noise limits.

The noise impact of the proposed wind turbine at the facility has been assessed in accordance with criteria outlined in the Department of Environment Heritage and Local Government Wind Farm Planning Guidelines (EHLG), 2006, which in turn draws on the methodology of the U.K. guidelines (ETSU-R-97). Account is also taken in this assessment of Noise Guidance (NG3) guidelines issued by the EPA in draft form in Nov 2010.

Detailed noise monitoring and modelling data is presented in the EIS. A summary of the results and conclusions is presented below. Table 9.7 & Figures 9.4 and 9.5 of the EIS are presented in Appendix D.

The nearest residential properties to the site are the noise sensitive locations NSL1, (Shanbally), NSL2 (Shanbally South) and NSL5, (Ringaskiddy to East of JBIL site). The highest predicted noise levels at these locations due to the proposed wind turbine are in the range 29 to 35 dB(A) LA90. The highest predicted cumulative wind turbine noise levels are in the range 36 to 38 dB(A) LA90, which are comfortably within the EHLG guideline night time noise limit of 43 dB(A) LA90.

The cumulative industrial and wind turbine noise at these locations are calculated to be in the range 40 to 41 dB(A) LAeq, and within the guideline nighttime noise limit for noise sensitive receptors. Given the relatively low absolute levels predicted for the cumulative wind turbine noise, it is not possible for this additional noise to compromise compliance with the daytime noise limit of 55 dB(A) LAeq, nor to compromise any revised evening noise limit of 50 dB(A) LAeq. These noise levels are also below the current IPPC Licence Noise Emission limits of 55 dB(A) LAeq during daytime and 45 dB(A) LAeq during nighttime, for the JBI facility.

For a wind turbine with characteristics of the Enercon E-101, the residual noise impact is expected to comfortably within the EHLG limit values, and in compliance with draft EPA guidelines for cumulative industrial and wind turbine noise and below the existing IPPC licence limits.

In terms of audible perceived noise, and taking account of the masking effects of background noise, the impact is expected to be negligible at the nearest noise sensitive locations to the site. No significant vibration impacts are predicted, arising from either the construction or operation of the proposed development.

Therefore there will be no new noise emissions emanating from the site as a result of the proposed wind turbine and no changes to the IPPC licence limit levels are proposed.



Contact Details: - Mobile +353 87 650 3582 darragh.musgrave@viridus.ie

Viridus Consulting Limited - Registered in the Republic of Ireland - Number 467958, VAT Number 9501156E
Registered office :- Quintas Partners, Heron House, Blackpool Park, Blackpool, Cork, Ireland.



2.4 Other IPPC Licence Considerations

The wind turbine at the JBIL site will form part of the sites infrastructure and as such will be included in the sites operation and management program once constructed. Energy use and generation will be closely monitored and reported within the Annual Environmental Report (AER).

It will be included in all health and safety, maintenance and operational procedures at the facility such as the sites accident prevention and emergency response planning.

After the construction phase there will be little or no waste generated by the turbine operation. Any waste that may arise will be recorded under the existing waste management procedures and included the facilities AER.

The wind turbine infrastructure will also be included in the facilities Decommissioning and Residuals Management Plan as well as the sites Closure Restoration and Aftercare Management Plan (CRAMP).

No major alterations to the sites operations and procedures are envisaged and no additional changes to the sites IPPC Licence are proposed.

2.5 Other Environmental Considerations

The construction phase of the project will be managed and executed in such a way as to limit any environmental impacts such as traffic, noise, dust, fuel spills, water runoff and waste generation.

The work programme is of a short duration – approximately six months and will be managed and supervised by experienced JBIL staff working with the project engineering design team and experienced building, electrical and turbine construction contractors.

A detailed Construction Method Statement has been compiled for the construction phase which included proposed mitigation measures to limit and reduce any potential environmental impacts.

2.6 Conclusions

While the development of the Enercon E101 WEC wind turbine on the JBIL site at Ringaskiddy will result in visual changes to the local landscape the installation of this infrastructure will not result in any increases in emissions from the site or changes to be made to the sites IPPC Licence.

The turbine will bring benefits in terms of sustainable non oil based electrical energy being used on the site and the resultant reduction in CO2 that that will deliver.



Contact Details: - Mobile +353 87 650 3582 darragh.musgrave@viridus.ie

Viridus Consulting Limited - Registered in the Republic of Ireland - Number 467958, VAT Number 9501156E
Registered office :- Quintas Partners, Heron House, Blackpool Park, Blackpool, Cork, Ireland.



Accompanying Appendices

Appendix A – Site Location & Turbine Drawings

Appendix B - Executive Summary of EIS

Appendix C – CCC and ABP planning documents

Appendix D – Some Noise Data from Chapter 9 of full EIS

*For inspection purposes only.
Consent of copyright owner required for any other use.*



Contact Details: - Mobile +353 87 650 3582 darragh.musgrave@viridus.ie

Viridus Consulting Limited - Registered in the Republic of Ireland - Number 467958, VAT Number 9501156E
Registered office :- Quintas Partners, Heron House, Blackpool Park, Blackpool, Cork, Ireland.



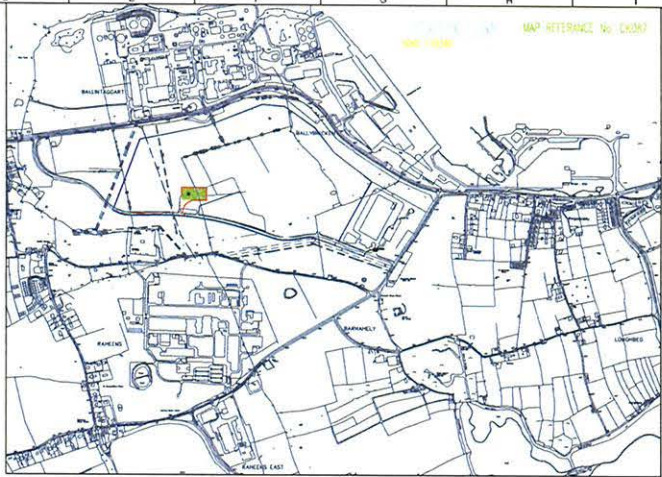
APPENDIX A

JBI Wind Turbine Drawings

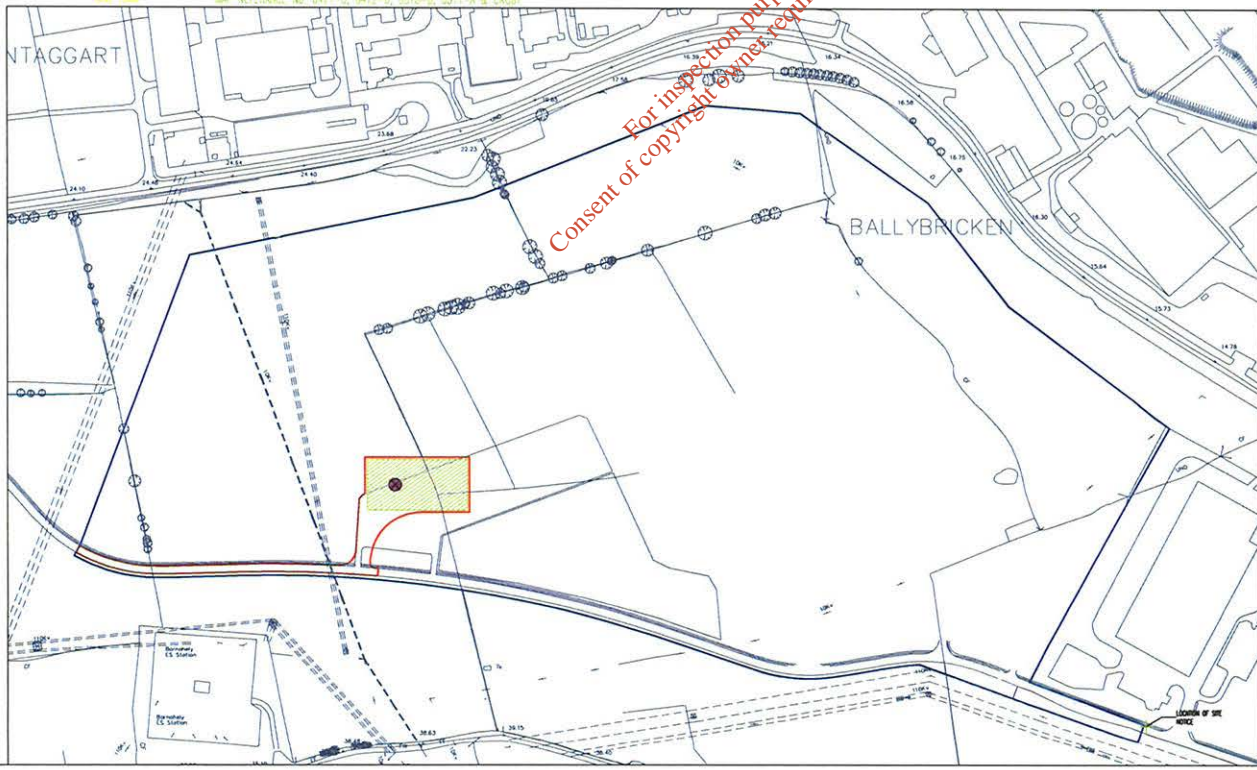
*For inspection purposes only.
Consent of copyright owner required for any other use.*

A1 A B C D E F G H I J K L M N

1
2
3
4
5
6
7
8
9
10
11



NOTES:
 1. THIS DRAWING IS FOR INFORMATION ONLY.
 2. THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OF ANY KIND.
LEGEND:
 - [Blue line] 1:50000 SCALE
 - [Red line] 1:25000 SCALE
 - [Green hatched area] 1:10000 SCALE
 - [Red circle with cross] 1:5000 SCALE



For inspection purposes only.
 Consent of copyright owner required for any other use.

P1	2804/11	SOS	JOM	JOM
Issue	Date	By	Check	Appr

ARUP

Client
 JANSSEN BIOLOGICS (IRELAND)
 BARNARELY
 RINGASKIDDY
 Co.CORK

Job Title
 CLHEG
 WIND ENERGY PROJECT

Drawing Title
 SITE LOCATION MAP

Scale of A1
 AS SHOWN

Drawing Status
PLANNING ISSUE

Job No.
C2465.40

Drawing No.
C301

Issue
P1

LEGEND

- [Symbol: Yellow hatched rectangle]
- [Symbol: Red outline]
- [Symbol: Blue outline]
- [Symbol: Purple circle with cross]
- [Symbol: Dashed line]

DATE	DESCRIPTION	BY	CHK

ARUP

JANSSEN BUCKLES (IRELAND)
BARBARLEY
PLANNING
CO. DUBLIN

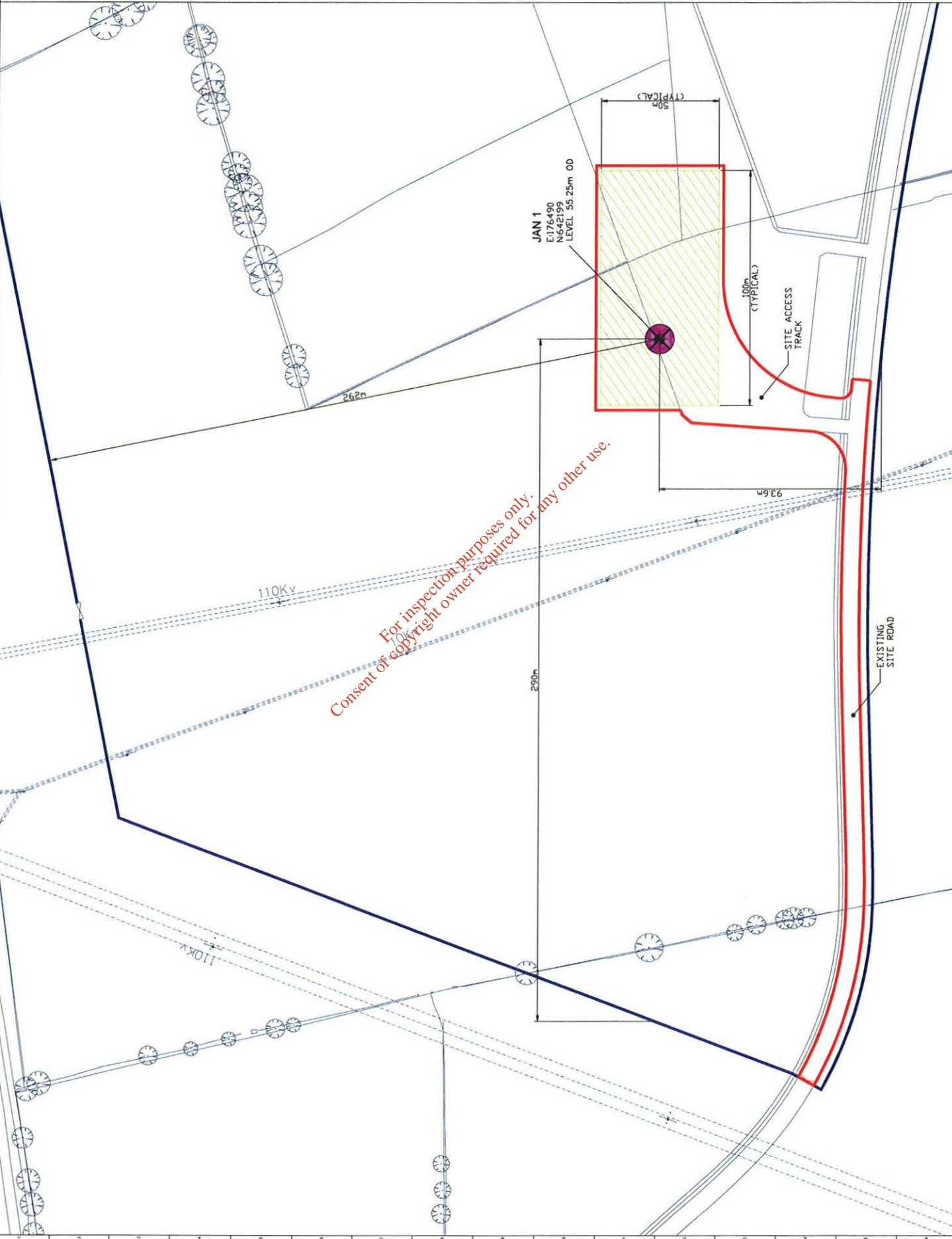
WIND ENERGY PROJECT

SITE PLAN

SCALE: 1:1000

PLAN NUMBER: CM65.04

CASE: 14



For inspection purposes only.
Consent of copyright owner required for any other use.

APPENDIX B

Executive Summary of EIS

*For inspection purposes only.
Consent of copyright owner required for any other use.*

Appendix 13.4 Country Houses (within the study area)

Non-Technical Summary

INTRODUCTION

Janssen Biologics (Ireland) intends to construct a new wind turbine with an output of up to three megawatts and associated infrastructure on the site of its existing biopharmaceutical manufacturing facility, at Barnahely, Ringaskiddy, County Cork.

The proposed development is one of a number of wind energy projects proposed by the Cork Lower Harbour Energy Group, of which Janssen Biologics (Ireland) is a member. The Group's renewable energy plan will comprise a total of six wind turbines installed throughout the area, with each turbine generating power for the site it is located on.

Janssen Biologics (Ireland) which is located in Ringaskiddy, County Cork, in close proximity to several major pharmaceutical API manufacturing facilities, is a wholly owned subsidiary of Johnson and Johnson.

Janssen Biologics (Ireland) operates under Environmental Protection Integrated Pollution Prevention Control Licence Register Number P0778-01.

ENVIRONMENTAL IMPACT STATEMENT

This Environmental Impact Statement has been prepared to provide information on potential environmental impacts of the proposed turbine, and to propose mitigation measures to reduce the residual impacts of the proposed development. The cumulative impacts arising from the proposed development in conjunction with the other Cork Lower Harbour Energy Group wind turbines at the Novartis, DePuy (Ireland) and GlaxoSmithKline (GSK) plants in the area is also assessed. The Environmental Impact Statement will be submitted with the planning application for the proposed development. The Environmental Impact Statement has been prepared in accordance with the relevant provisions set out in the Planning and Development Regulations 2001. Due regard has been given to guidelines and advice notes for the preparation of environmental impact statements published by the Environmental Protection Agency. The Environmental Impact Statement was also prepared with due regard to the 2006 Department of the Environment, Heritage and Local Government guidelines *Wind Farm Planning Guidelines*, and with the 2008 Irish Wind Energy Association and Sustainable Energy Ireland guidelines *Best Practice Guidelines for Windfarms*.

NEED FOR THE SCHEME

The proposed wind turbine will result in both financial and environmental improvements. It will reduce the cost of the operations at the Janssen Biologics (Ireland) facility in Ringaskiddy, making it more cost efficient and helping Centocor to sustain operations in the Cork area. Janssen Biologics (Ireland)'s dependence on energy generated by the combustion of fossil fuels will be reduced as a result of the proposed turbine, and the project will also result in reduced carbon dioxide emissions. The Irish Government's contribution to the

achievement of EU targets on climate and energy includes reducing emissions of greenhouse gases, increasing the use of renewable energy and improving energy efficiency. The proposed development will contribute to helping Ireland in meeting these targets.

ALTERNATIVES CONSIDERED

Janssen Biologics (Ireland) continuously strives to reduce its energy needs and become more energy efficient. An energy reduction programme is in place and an energy team monitors the performance of energy goals. A number of energy saving initiatives has been installed at the Ringaskiddy facility, including a biomass boiler in 2008 which has reduced the carbon dioxide emissions from the facility. In addition, the use of combined heat and power at the facility was considered, however it was considered that the overall impact on site energy needs would not be enough to justify the capital outlay. The proposed wind energy project represents the best payback and value for money option for Janssen Biologics (Ireland), in terms of reducing site electricity costs.

Alternative locations outside the boundary of the Janssen Biologics (Ireland) site were not considered for the location of the proposed wind turbine, as these are precluded by the current power regulatory framework.

During the selection process for the optimal location of the proposed wind turbine within the Janssen Biologics (Ireland) site, the optimisation of wind energy opportunities on the site was taken into consideration within environmental, planning, engineering, health and safety, future development and commercial constraints. Proposed locations for the wind turbine were reviewed in the context of these constraints and several iterations of the turbine layout were completed. The turbine location identified is based on an optimised technical, economic and environmental layout. Unforeseen ground conditions may require minor movements (micro-siting) of the position of the turbine. Any alteration to the location of the proposed works would be agreed with Cork County Council, prior to commencement of construction.

SITE AND SCHEME DESCRIPTION

The Janssen Biologics (Ireland) facility is located on a prominent hill, approximately one kilometre west of the village of Ringaskiddy. The Janssen Biologics (Ireland) buildings are located at the eastern end of the site area. The overall site is approximately 39 hectares in extent, with 12 hectares of these currently being used for the Janssen Biologics (Ireland) facility. Cork Harbour is approximately three kilometres east of the site. The Ringaskiddy area, in general is industrial in nature and there are a number of other large industrial sites in the area.

The main features of the proposed development include a new wind turbine with a capacity of up to three megawatts, an associated transformer, buried electrical and fibre-optic cabling, and a crane pad. The transformer will be housed within or adjacent to the turbine. The turbine will have a hub height of up to 100 metres with a rotor radius of approximately 50.5 metres. It will be of a typical modern design incorporating a tubular tower and three blades attached to a nacelle

housing the generator, gearbox and other operating equipment. The colour of the proposed turbine will be a semi-matt pale grey. The turbine foundation will comprise a reinforced concrete pad. An area of hardstanding (crane pad) will be required adjacent to the turbine foundation, to provide a stable base on which to lay down turbine components ready for assembly and erection and to site the two cranes necessary to lift the tower sections, nacelle and rotor into place. The crane pad will remain in situ following construction, in order to facilitate any future maintenance operations which may require cranes. Underground cables will link the turbine to the Janssen Biologics (Ireland) facility. In addition to generating electrical power for the Janssen Biologics (Ireland) facility, electricity will also be exported, from time to time to the national electrical grid via underground cabling.

The turbine is projected to have an operating lifetime of 25 years. The wind turbine operations will be controlled from the Janssen Biologics (Ireland) facility and will be operated and maintained in accordance with the relevant Health and Safety regulations.

The turbine will operate at all times when wind speeds are suitable, with the exception of downtime for maintenance.

CONSTRUCTION ACTIVITIES

The duration of the construction period for the wind project is expected to be six months. It is anticipated that up to 20 construction workers will be employed on site at any one time. The main elements of the construction process will comprise site preparation, excavation for and construction of turbine foundation, excavation of trenches and laying of underground cables, movement onto site and erection of wind turbine, connection to on-site distribution and signal cables, connection to existing ESB Networks system and commissioning of site equipment. A temporary construction compound will be required. This will be located within the Janssen Biologics (Ireland) facility. A crane hard standing will be constructed and will be located adjacent to the turbine base. Access to the site for construction vehicles delivering turbine components will be from the N28 via an existing access point.

Construction traffic will comprise heavy goods vehicles, workforce traffic and general site traffic. Mobile crane parts, including ballast, will be used to erect the turbines and will be delivered and removed by heavy goods vehicles. Abnormal load vehicles will be required for the delivery of the wind turbine components. For road safety reasons there may be a requirement for temporary local road closures during transportation of abnormal loads to the site (e.g. the turbine rotors). Road closures, if required, will be of temporary and of short duration. The construction phase will involve approximately 1000 Heavy Goods Vehicle trips over a 6 month period. This will equate to an average of 6 Heavy Goods Vehicles trips per day, with a peak of between 30 and 40 trips per day during certain construction activities i.e. delivery of ready mix concrete. Construction staff will generate a peak of approximately 60 car/light goods vehicle trips per day. A construction management plan will be implemented and will include management of construction traffic. The impact of construction traffic on the local road network will be very slight.

Every reasonable effort will be made to ensure that any detrimental environmental effects will be minimised during the construction phase of the project. A

construction environmental management plan will be prepared and implemented with the objective of keeping disruption and nuisance to a minimum. The employment of good construction management practices will minimise the risk of pollution of soil, storm water run-off or groundwater. Waste generated during the construction phase will be carefully managed according to accepted waste hierarchy which gives precedence to prevention, minimisation, reuse and recycling over disposal, with energy recovery and finally disposal to landfill. It is anticipated that 50 per cent of soil excavated for the turbine foundation may be reused to backfill over the lower turbine pad. The remaining subsoil will be transported offsite for appropriate reuse, or disposal at an appropriate facility.

The cumulative impacts of simultaneous construction of all four Lower Harbour Energy Group sites will be very slight. Impacts will be short term and of a temporary nature.

It is anticipated that, with proper management, the construction phase of the development will not have significant or long-term cumulative negative impacts.

PLANNING AND POLICY CONTEXT

Both international, national and local development policy support the appropriate development of wind energy. In particular, in December 2010, Cork County Council amended the Development Plan (Variation Number 2 of the Plan) to facilitate the appropriate future development of wind energy projects in locations such as Ringaskiddy, in accordance with the Planning and Development Acts. With the incorporation of Variation No.2 to the Plan, the Plan's general policy of support for wind energy now applies to wind energy projects in Ringaskiddy, and subject to normal planning and sustainable development criteria, the project is in compliance with this policy.

HUMAN BEINGS

Employment will be directly provided for approximately 20 workers during the construction of the wind turbine. There will also be associated secondary employment and economic activity associated with the construction of the proposed development.

The increase in traffic, generated by the construction of the wind turbine will not be significant. Refer to the **Construction Activities** section.

No significant flicker effects are predicted arising from the operation of the turbine.

It is envisaged there will be no recreational amenity impacts as a result of the proposed wind turbine.

There will be no significant impact on land use, property values, agriculture or tourism as a result of the proposed development.

The potential noise, air and visual impacts are described in the relevant above sections.

Overall, other than visual impacts from a number of viewpoints (refer to above Landscape and Visual section) there will be no significant, long term, adverse cumulative impacts on human beings as a result of the construction and operation of all of the six Lower Harbour Energy Group wind turbines.

FLORA AND FAUNA

The impacts of the proposed Janssen Biologics (Ireland) wind turbine on flora and fauna, and also the cumulative impacts of the development of six turbines in the wider area on flora and fauna are assessed.

The site of the proposed wind turbine is not covered by any nature conservation designation. Five designated areas for nature conservation occur within 5km of the site of the proposed development, four of which are proposed Natural Heritage Areas. Monkstown Creek which is within the Cork Harbour Special Protection Area is located less than 1km north of the site. Monkstown Creek is also designated as a proposed Natural Heritage Area. Due to the proximity of the proposed turbine to the Special Protection Area, an Appropriate Assessment was completed to assess the potential for the proposed development to impact negatively on the integrity of this Natura 2000 site.

Mitigation measures have been incorporated into the project design, to avoid areas of particular sensitivity for rare and protected species by excluding or relocating turbines. In addition, best practice will be implemented during all construction activities to prevent potential impacts to surface waters.

The principal residual impacts of the proposed Janssen Biologics (Ireland) development will be a slight, local risk of collision with the turbine during operation for bats and some more vulnerable species of non-breeding birds.

With regard to cumulative impacts of the construction and operation of all six Cork Lower Harbour Energy wind turbines on flora and fauna, there will be no significant cumulative impacts on designated areas of conservation or on flora and fauna.

Under the 2008 EUROBATS guidelines it is recommended that monitoring of bat populations is conducted for three years once the wind turbine becomes operational. Monitoring results from all operational turbines within nearby sites should be assessed cumulatively.

Following construction, bird populations within 600 metres of the turbine, should be monitored on a periodical basis over three years, by a competent ornithologist to determine if any effects of displacement disturbance can be detected. In addition, regular searches for bird casualties will be undertaken within a radius of 140 metres of the turbine to monitor the actual number of collisions.

LANDSCAPE AND VISUAL

The proposed development was assessed with regard to its visual impact, the extent to which it will be seen, and its impact on the existing landscape character. The cumulative landscape and visual impacts arising from the proposed

development in conjunction with the other wind turbines at the Novartis, DePuy (Ireland) and GlaxoSmithKline plants in the area are also assessed.

Once installed, the physical scale and movement of the turbine will give rise to significant change in the immediate landscape however the turbine has been located to minimise visual and other environmental impacts. In addition, the turbine will be painted in an off-white or grey colour with a matt finish to help it blend in effectively with typical Irish skies. Night lighting, for aviation safety, will comprise a small warning light at the top of the nacelle or turbine hub.

In general, construction impacts will be temporary, negative and localised in nature.

During the operational stage, landscape and visual impacts will mainly arise from the physical built presence of the turbine and the movement of the blades. The wind turbine will be visible over a wide area of the surrounding landscape and lower harbour. The impacts of the Janssen Biologics (Ireland) turbine on views will range from imperceptible, through slight and moderate, to significant, depending on the viewpoint, distance and intervening topography. During operation, the proposed Janssen Biologics (Ireland) turbine will impart a slight to moderate change to the lower harbour landscape character area.

The cumulative impacts, of all six turbines operating together, on views will range from imperceptible, through slight to moderate, to significant. The 6 wind turbines, when operating together, will impart a moderate cumulative change in the harbour landscape character area.

The impact of the wind turbine within the landscape will very much depend on by whom and how it is experienced.

NOISE AND VIBRATION

The environmental noise and vibration impact assessment of the construction and operation of the proposed wind turbine at Janssen Biologics (Ireland) was undertaken by ANV Technology. The assessment is in accordance with criteria outlined in the 2006 Department of Environment Heritage and Local Government *Wind Farm Planning Guidelines*.

Account is also taken of cumulative industrial plus wind turbine noise limits. Compliance with guideline noise limits is assessed based on the cumulative wind turbine noise levels, assuming that all six Cork Lower Harbour Energy Group wind turbines are installed.

Noise propagation modelling was undertaken as part of the noise impact assessment. The final wind turbine model has not yet been selected, however, the noise assessment used data for the Enercon E-101, which is indicative of the turbine type being considered for the site.

The noise impact of the construction phase of the proposed wind turbine on the nearest houses will be negligible.

For a wind turbine with characteristics similar to the Enercon E-101, the highest predicted noise levels as a result of the operation of proposed Centocor turbine and

also the cumulative wind turbine noise levels are expected to be comfortably within the Department of Environment Heritage and Local Government limit values.

In terms of audible wind turbine noise, the noise impact at the residential noise sensitive locations will be negligible.

EPA guidelines on the assessment of wind turbine noise at Integrated Pollution Prevention Control licensed sites were in draft form at the time of preparation of this Environmental Impact Statement, however it is likely that the Environmental Protection Agency will require the cumulative industrial plus wind turbine noise to be within the standard Environmental Protection Agency noise limits, at the noise sensitive receptors.

The analysis indicates that the cumulative noise levels will be comfortably within this limit at the nearest residential noise sensitive locations.

At this planning stage, the most effective mitigation measure within the control of Centocor is selection of wind turbines with the lowest sound power emissions.

Regarding noise conditions which may be imposed by the EPA, it is considered that the Centocor wind turbine will be able to operate within standard fixed limits, and will not have to apply for special limits relative to background noise.

AIR QUALITY AND CLIMATE

There will be minor emissions to the atmosphere during the construction phase. Containment and dust suppression techniques during construction will be sufficient to ensure that any off site impacts are negligible. Therefore, it is not envisaged that the turbine will have any significant adverse impacts on ambient air quality or climate.

During operation, long-term beneficial impacts are predicted relating both to global air quality and climate.

SOILS, GEOLOGY, SURFACE WATER AND GROUNDWATER

The bedrock of the site of the proposed development is recorded as being of the Cuskinny member of the Kinsale Formation, generally described as a mud dominant succession laid down in early Carboniferous times. The Cuskinny Member is distinguished from the other members of the Kinsale Formation by the higher proportion of sandstone and sand-dominant layers. The upper one to two metres of bedrock at the site is very highly weathered. The soils at the location of the proposed wind turbine are expected to be topsoil underlain by a stiff to very stiff silt sandy gravelly clay. There are no sites of geological interest within the Janssen Biologics (Ireland) site.

There are no watercourses or drainage ditches within or adjacent to the site of the proposed wind turbine. The site lies on the Ringaskiddy Peninsula in the lower part of Cork Harbour, and is located to the south of Monkstown Creek.

Groundwater at the site flows in a south easterly direction, veering to a southerly direction along the southern boundary of the site.

Excavation of the foundation of the turbine will involve excavation of approximately 1300 cubic metres of spoil, of which 50 per cent may be reused to backfill over the lower pad. The remaining subsoil may be transported offsite for appropriate reuse, or disposal at a licensed facility.

The employment of good construction management practices will minimise the risk of pollution of soil, storm water run-off or groundwater. The removal of excavated soil from the site, if required, will be long term and irreversible, but not significant. It is considered that overall there will be no significant impacts on soils, geology, surface water and groundwater as a result of the construction and operation of the proposed development.

There will be no significant cumulative impacts on soils, geology, surface water and groundwater as a result of the construction and operation of all of the six Lower Harbour Energy Group wind turbines.

MATERIAL ASSETS

Existing material assets associated with the site of the proposed development are assessed, projections of resource use are made for the construction and operation of the proposed development, and the impact assessed.

The Irish Aviation Authority (IAA) has been consulted in relation to the proposed scheme. They identified the potential for effects on their radar installation at Tulligmore Hill, south of Cork Airport. In response to these concerns, an Aviation Impact Assessment was completed. The IAA is currently commissioning a radar installation which is similar to that at Tulligmore Hill. This new radar installation is located near Shannon Airport, and it will incorporate mitigation measures similar to those proposed in the Aviation Impact Assessment for this project. The IAA has advised that the outcome of this commissioning will help to inform their assessment of the proposed development.

The proposed wind turbine will be in keeping with Cork County Council zoning for the site. It is considered that the proposed development will have an overall neutral impact on local settlement and undeveloped land resource. It is anticipated that property values in the Ringaskiddy area will not be affected as a result of the construction or operation of the proposed development.

There will be no significant impact on the road infrastructure and traffic as a result of the construction phase of the proposed wind turbine.

The operation of the wind turbine will reduce the consumption of mains electricity on the Centocor site. At certain stages, surplus power will also be exported to the national electricity grid. No significant impact on existing power infrastructure is envisaged.

There will not be a significant impact on the Cork County Council water supply, as a result of the construction of the proposed development.

There are no known mineral resources located within the site boundary.

Overall, it is anticipated that there will be no significant, cumulative adverse impacts on material assets as a result of construction and operation of all of the six Lower Harbour Energy Group wind turbines.

ARCHAEOLOGY, ARCHITECTURAL AND CULTURAL HERITAGE

There are no recorded archaeological sites within the site of the proposed wind turbine development. There are forty seven recorded archaeological sites within 2 kilometres of the site, and which are listed in the Record of Monuments and Places. No features of archaeological/architectural/cultural heritage interest were noted during site inspection.

The proposed development will not impact directly on any recorded archaeological site or on any architectural heritage.

The turbine will have a visual impact on a ringfort in Barnahely, where the turbine will be visible in the background of certain views of the ringfort. There will be less significant visual impacts on a graveyard, church and fortified house at Barnehely.

The construction of the proposed development will involve ground disturbance. However, as the entire area has been previously disturbed, no mitigation is necessary. It is always possible that stray finds may be present in material being disturbed on the site. In the event of archaeological material being uncovered such material will be fully resolved to professional standards of archaeological practice (Policy Guidelines on Archaeological Excavation – Department of Arts, Heritage, Gaeltacht and the Islands). The developer is aware of the National Monuments Legislation (1930-1994) which states that in the event of the discovery of archaeological finds or remains, the Department of the Environment, Heritage and Local Government should be notified immediately and that any subsequent investigation should be facilitated and funded by the developer.

CUMULATIVE IMPACTS, OTHER IMPACTS AND INTERACTIONS

The Janssen Biologics (Ireland) wind energy project has been assessed in the context of other planned wind energy projects which are proposed for the Lower Harbour area. For each environmental topic, the cumulative impacts of all of the Cork Lower Harbour Energy Group projects have been assessed, to ensure that all potential significant impacts and interactions are identified.

VIEWING AND PURCHASING THE ENVIRONMENTAL IMPACT STATEMENT

The full Environmental Impact Statement, of which this is a non-technical summary, can be viewed and purchased at the offices of the Planning Department, Cork County Council, County Hall, Carrigrohane Road, Cork.

APPENDIX C

Planning Permission Information

*For inspection purposes only.
Consent of copyright owner required for any other use.*

HERITAGE UNIT REPORT
FURTHER INFORMATION

APPLICATION NO.	11/04945
APPLICANT	Janssen Biologics (Ireland)
DESCRIPTION	Erection of 1 no. wind turbine with hub height of up to 100m, blade radius of up to 50.5m and overall height from ground to tip of blade of up to 150.5m, upgrade of existing site roads, construction of internal site tracks and all other associated works
LOCATION	Barnahely Ringaskiddy Co Cork
DECISION DUE DATE	23/02/2012

Assessment

This report has been prepared in response to proposed development application made by Janssen for 1 turbine at Barnahely, Ringaskiddy. However, it is noted that this planning application was made in tandem with three other applications for the development of a total of 6 turbines and ancillary infrastructure in the Ringaskiddy area, and this application is considered, not just in isolation, but in combination with the turbines subject to the other applications. This report deals with potential impacts on natural habitats and species arising from the construction and operation of the turbines. The turbines are proposed to be located near the Cork Harbour Special Protection Area, notified for designation under the European Communities (Natural Habitats) Regulation 1997-2005. The species for which the SPA is designated are: Cormorant, Shelduck, Oystercatcher, Golden Plover, Lapwing, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank and Common Tern. It is also designated because it regularly supports > 20,000 wintering waterbirds. Other species of special conservation interest within this SPA are Little Grebe, Great Crested Grebe, Grey Heron, Wigeon, Teal, Pintail, Shoveler, Red-breasted Merganser, Grey Plover, Black-headed Gull, Common Gull and Lesser Black-backed Gull.

An Environmental Impact Statement has been provided in support of this application. In addition a Natura Impact Statement has been provided. Studies carried out in the formulation of this report have addressed potential impacts on habitats and on a range of species including birds, bats and other mammalian species including badger and otter. No significant impacts on habitats or species other than birds are predicted in any of the reports pertaining to this application. This is accepted by author of this report. The documentation provided in support of this application is comprehensive and is supported by significant survey effort to identify important flightlines, feeding sites and roosting sites in and around the proposed development.

The principle risks to wintering birds using the harbour and adjacent area for winter feeding and roosting arise from the operation of the wind turbines and include the risk of the creation of a barrier effect to movement; habitat loss; collision risk; and the risk of disturbance displacement (avoidance of feeding or roosting sites).

Risk of disturbance displacement: I am satisfied that given the relatively low number of turbines proposed to be built out under the four applications, and the dispersed nature of these that there will be no significant barrier to bird movement created.

HERITAGE UNIT REPORT
FURTHER INFORMATION

Habitat Loss: Given the nature of the habitat within which each of the 6 turbines is proposed to be sited, I am satisfied that the proposed development will not give rise to significant loss of any habitat, upon which species for which the SPA is designated, or any other species, are dependant, when considered either on its own or in combination with the other turbine applications in the area.

Collision Risk: While radar studies produced limited results for this turbine, field survey work identified ten species flying within 500m of the proposed turbine location. These included three species for which the SPA is designated and six species which have been identified to be potentially vulnerable to collision risk (Cormorant, Black-tailed Godwit, Peregrine Falcon, Sparrowhawk, Buzzard and Kestrel). On the basis, that all of these species were recorded on an infrequent basis despite considerable survey effort, and that the turbine is proposed to be located outside the main flightlines identified by visual and radar survey, I am generally satisfied with the applicants assessment, that the risk of collision with species for which the SPA is designated and others is low. I am in agreement with the NPWS that it may be necessary to change land management within the immediate vicinity of the turbine, should it be built, to minimise suitability for foraging birds and further reduce the collision risk.

Disturbance Displacement: The proposed turbine would be located >700m from any coastal roosting sites/feeding areas. There is no potential for the turbine to give rise to disturbance / displacement impacts on coastal roosts/feeding areas within the SPA. However, additional information was sought in relation to the potential for this proposed development to give rise to the potential risk of disturbance/displacement or to increase collision risk for Black-tailed Godwit feeding in agricultural fields identified as the Barnahely foraging field area close to the proposed turbine. In response to this query the applicants have clarified that this species does not occur in these fields. The applicants have clarified that Black-tailed Godwit do not use these fields, and that the only species occurring in these fields is Curlew, which species has been recorded feeding without disturbance within 100m of turbines. On the basis of this clarification, I am satisfied that the proposed development will not give rise to disturbance displacement impacts on any species.

I have no objection to the granting of permission for this development subject to the setting down of those conditions recommended by NPWS and implementation of mitigation measures set out in the EIS relating to the timing of vegetation clearance.

The Appropriate Assessment Report is attached to this report.

Sharon Casey

Planning Department.

HERITAGE UNIT REPORT
FURTHER INFORMATION

Habitats Directive: Appropriate Assessment Report

Development Location	Barnahely Ringaskiddy, Co. Cork
Natura 2000 sites within impact zone	Proposed development is adjacent to Cork Harbour Special Protection Area 4030
Qualifying Interests of Natura 2000 site(s)	<p>Cork Harbour SPA is selected for:</p> <p>Cormorant; Shelduck; Oystercatcher; Golden Plover; Lapwing; Dunlin; Black-tailed Godwit; Bar-tailed Godwit; Curlew; Redshank; Common Tern and for the regular occurrence of 20,000 wintering waterbirds.</p> <p>Additional Special Conservation Interests: Little Grebe; Great Crested Grebe; Grey Heron; Wigeon; Teal; Pintail; Shoveler; Red-breasted Merganser; Grey Plover; Black-headed Gull; Common Gull; Lesser Black-backed Gull</p> <p>Wetland & Waterbirds</p>
Conservation objectives of the Natura 2000 site(s)	To maintain the special conservation interests for this SPA at favourable conservation status: Cormorant, Shelduck, Oystercatcher, Golden Plover, Lapwing, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Common Tern, 20,000 wintering waterbirds, Little Grebe, Great Crested Grebe, Grey Heron, Wigeon, Teal, Pintail, Shoveler, Red-breasted Merganser, Grey Plover, Black-headed Gull, Common Gull, Lesser Black-backed Gull, Wetland & Waterbirds.
Annexed habitats which may be affected.	None identified.

Additional protected species which may be affected.

Bats.

Planning File Ref

11/4945

Description of the project

Erection of 1 no. wind turbine with hub height of up to 100m, blade radius of up to 50.5m and overall height from ground to tip of blade of up to 150.5m, upgrade of existing site roads, construction of internal site tracks and all other associated works. Note: this planning application was made in tandem with three other applications for the development of a total of 6 turbines and ancillary infrastructure in the Ringaskiddy area.

Description the elements of the project that are likely to give rise to significant impacts on Natura 2000 sites and affect key species and habitats.

Habitats Directive: Appropriate Assessment Report

Birds: Species for which SPA is selected which have been identified to be particularly vulnerable to windfarms include Cormorant, Golden Plover, Lapwing, Curlew and Common Tern. Other species that have been passing over and through the area where the proposed turbine will be located include Black-headed Gull; Lesser Black-headed Gull; Greater Black-backed Gull; Peregrine Falcon, Sparrowhawk; Buzzard and Kestrel. Some of these species have also been identified to be potentially vulnerable to collision risk. All of these species except for Black-headed Gull were recorded infrequently within the area (1-3 sightings). There were between 4 and 9 sightings of Black-headed Gull within the area.

Barrier Effect: Large wind farms may have an impact on birds by forcing them to change direction during migration or during regular foraging activities. Given scale of the proposed development when considered in combination with the other three applications in the vicinity of Ringaskiddy and in particular the dispersed pattern of development proposed, I am satisfied that the barrier effect is not a substantive risk to birds at this site.

Habitat Loss or degradation: Wind energy projects can result in direct loss of habitat used by foraging and nesting birds. Such impacts can be significant where the amount of habitat to be lost represents a significant proportion of the available foraging habitat in the area. The turbine is proposed to be located within an area of arable crops and is used in a limited way by species for which the SPA is designated. This habitat is widely available in the area. I am satisfied, that the proposed development will not give rise to significant loss of any habitat upon which species for which the SPA is designated, or any other species, are dependant, when considered either on its own or in combination with the other turbine applications in the area.

Collision Risk: While radar studies produced limited results for this turbine, field survey work identified ten species flying within 500m of the proposed turbine location. These included three species for which the SPA is designated and six species which have been identified to be potentially vulnerable to collision risk (Cormorant, Black-tailed Godwit, Peregrine Falcon, Sparrowhawk, Buzzard and Kestrel). On the basis, that all of these species were recorded on an infrequent basis despite considerable survey effort, and that the turbine is proposed to be located outside the main flightlines identified by visual and radar survey, I am generally satisfied with the applicants assessment, that the risk of collision with species for which the SPA is designated and others is low. I am in agreement with the NPWS that it may be necessary to change land management within the immediate vicinity of the turbine, should it be built, to minimise suitability for foraging birds and further reduce the collision risk.

Disturbance and Displacement: Disturbance can lead to displacement and exclusion of species from habitats valuable for feeding or roosting. Species for which this SPA is selected or has been identified to be important that are particularly vulnerable to habitat displacement are Cormorant and Golden Plover. However, the proposed turbine is located >700m from Monkstown Creek and >1km from Lough Beg. The applicants have clarified in their FI submission that the only species feeding within fields is Curlew. These fields are over 300m from the proposed turbine and Curlew have been recorded within 100m of turbines without displacement. On this basis, I am satisfied that the proposed turbine will

Habitats Directive: Appropriate Assessment Report

<i>not give rise to any disturbance / displacement impacts.</i>	
<i>Bats: Potential impacts on bats arising from the erection of wind farm applications could include loss of hunting habitat during construction and operation; interference with flight corridors; ultrasound emission; collision with rotors. No roost sites were identified within or close to the site and habitat, and the value of habitats on site for foraging bats is relatively low. No significant impact on any bat species has been identified.</i>	
Describe how the integrity of the site(s) is likely to be affected by the project	
No impacts on the integrity of Cork Harbour or any other Natura 2000 site have been identified.	
Describe what mitigation measures are to be introduced to avoid, reduce or remedy the adverse effects on the integrity of the site/sites. And	
The applicants have identified bird usage within and adjacent to the proposed development site, including information relating to commuting routes, roost sites and feeding areas. In addition, they have presented information relating to the distances to turbines within which a range of species using the site have been recorded feeding and roosting. On the basis of the information provided, they have demonstrated that there will be no impact on the integrity of the SPA arising from the proposed development.	
Consultation	Response Summary
National Parks and Wildlife Service	The NPWS has requested a number of conditions be placed on this development should permission be granted. These relate to monitoring of the site post construction to determine impacts on birds, the use of synchronously flashing lights to light turbines and the adjustment of land management practises to minimise the attractiveness of fields adjacent to the proposed turbine for foraging birds and increasing the suitability of other sites away from the turbine.

Appropriate Assessment Conclusion

On the basis of information provided in the EIS, NIS and FI, I am satisfied that there will be no impacts on the integrity of the Cork Harbour Special Protection Area or on any protected species or habitat arising from the proposed development.

Habitats Directive: Appropriate Assessment Report

Completed By Sharon Casey

Date 24/01/2012

Conclusion

There is no objection to permission being granted with the attachment of the following condition(s):

Or

Refusal is recommended for the following reason(s):

Or

Clarification is sought with regard to the following issues:

(Delete whichever of above is inapplicable)

Conditions/Reasons



HERITAGE UNIT REPORT
FURTHER INFORMATION

Sharon Casey

01/02/2012

*For inspection purposes only.
Consent of copyright owner required for any other use.*

REPORT

APPLICATION NO.	11/04945
APPLICANT	Janssen Biologics (Ireland)
DESCRIPTION	Erection of 1 no. wind turbine with hub height of up to 100m, blade radius of up to 50.5m and overall height from ground to tip of blade of up to 150.5m, upgrade of existing site roads, construction of internal site tracks and all other associated works
LOCATION	Barnahely Ringaskiddy Co Cork
DECISION DUE DATE	23/02/2012

Assessment

**Lower Harbour Wind Energy Project
Files S/11/4944, S/11/4945, S/11/4946 and S/11/4969**

I have read the original Senior Planner's reports on these files and the subsequent reports which have been prepared following the receipt of the responses to the further information requests which issued on June 23rd. last. This additional report has become necessary due to the fact that I have decided not to accept the SP's recommendation to refuse all four applications. My rationale for these decisions is outlined hereunder.

1. Background and Policy

Ringaskiddy is one of only four locations within the county which are designated strategic employment locations. Successive CDP's have made such a designation and specific reference is made in the text of the CDP to the fact that employment is the primary land use in this area. Certain restrictions are imposed on further residential development in the area in recognition of this fact. Ringaskiddy is the largest foreign direct investment location in Ireland outside of the greater Dublin area. There are 7,800 people employed there. The CDP seeks to achieve sustainable development in the county and such development in this context has economic as well as environmental legs.

The Local Area Plan (LAP) reinforces the industrial focus of Ringaskiddy in paragraph 4.1.3 in line with the CASP update 2008. This is also outlined in paragraph 5.2.19 of the CDP.

LAP – Para. 4.1.3

“4.1.3. The proposed spatial strategy in the CASP Update 2008 involves support for the development of Ringaskiddy as a strategic employment location, focused on industry. Major transport infrastructure proposals include potential for enhanced development of port related facilities at Ringaskiddy. Ringaskiddy will continue to act as a Strategic Employment location and indeed should see significant industrial employment growth.”

REPORT

The importance of the industrial sectors concerned here to the local economy is undisputed. The following table was extracted from the CSO's website under "Statistics" and shows the value of products manufactured in Ireland in 2009.

Total Value of Products manufactured in Ireland and sold
- 2009 PRODCOM Product Sales €000's

For inspection purposes only.
Consent of copyright owner required for any other use.

REPORT

Description	Value EUR '000
Mining, quarrying (except energy producing materials)	758,462
Food products	15,199,818
beverages	1,832,372
Textiles, wearing apparel, leather and related products	335,131
Paper and paper products; printing and reproduction of recorded media	1,821,644
Chemicals and chemical products	20,011,444
Basic pharmaceutical products and preparations	15,143,072
Rubber and plastic products	958,561
Basic metals and fabricated metal products, machinery and equipment n.e.c	3,591,422
Computer, electronic, optical and electrical equipment	18,072,983
Wood and wood products and non-metallic mineral products, furniture	2,939,272
Transport equipment	577,203
Other	5,315,911
Total	86,517,295

Chemicals and chemical products, pharmaceuticals and metal products amount to approximately 44% of the total National manufacturing output figure. The CSO's quarterly National Accounts for Q1 2011 show that GDP rose by 1.3% in contrast to GNP which recorded a drop of 4.3%. These figures suggest that exports from the type of international companies concerned here remain one of the chief contributors to economic activity. The CSO report "Capital Assets in Industry", dated April 21st, 2011 shows that capital acquisitions in the chemical and chemical products sector alone for 2010, at €359.4M., constituted 27% of all such manufacturing acquisitions. County Cork is recognised as the main cluster of pharmaceutical manufacturing activity and as an important medical devices manufacturing centre within the State. The South West

REPORT

region, encompassing Cork and Kerry, derives a proportionately higher income (GVA) from manufacturing than any other region.

The various reports make reference to extracts from National, local and County policy and I do not intend to restate all of these. However, I will comment below on individual key policies and positions which I consider should also be considered in this matter.

Chapter 5 of the County Development Plan (CDP) sets out the Council's economic and employment strategy. ECON 1-1(a) is reproduced below. The importance of supporting productive facilities already in place is important due to the international competition in attracting new companies to locate in Cork.

Development Plan Objectives: Economic Development	
ECON 1-1	Overall Strategy for Economic Development (a) It is an objective generally to encourage all forms of economic and employment development throughout the County in response to the policies and objectives contained within the National Spatial Strategy, the Regional Planning Guidelines, the North and West Cork Strategic Plan, the CASP Update 2008 and in accordance with the overall development strategy and objectives of this plan.

Chapter 6 of the CDR - Transport and Industry deals with energy matters. I believe objective 7-1(a) is also relevant to these applications. It is reproduced below. The turbines offer a security of supply for the individual sites and also provide alternative energy to the grid.

Development Plan Objectives: Energy	
INF 7-1	Energy Networks and Infrastructure (a) It is an objective to recognise the national importance of ensuring security of energy supplies for servicing a whole range of economic sectors in line with the Government's White Paper 'Delivering a Sustainable Energy Future for Ireland'.

In April 2010, IDA Ireland requested the Council to vary its CDP in relation to wind energy. The proposal had the effect of facilitating the development of wind turbines

REPORT

in Cork harbour on industrial sites in strategic employment locations. This followed the preparation of a master plan by IDA Ireland which identified wind energy as the most economically feasible energy producing technology to support the long term economic and environmental development of local industrial sites. The impetus for this variation was based upon the desire of IDA Ireland to address the significant energy costs which companies in Ireland have to bear and in particular in comparison with competing locations throughout the world. The IDA state that Ireland had the second highest energy cost in the EU in 2009 and costs per KWHr. were over twice US figures. The continuing high levels of unemployment and the current economic conditions have added to the importance of reducing these costs.

2. Senior Planner's Report. - Background

As a means of considering the issues raised by these applications, I will comment on the content of the SP's report.

2.1. Under "Background Comments", reference is made to advice provided by Dr. Nicholas Mansergh, Senior Planner to the undersigned in relation to an approach from DePuy in 2007 when they proposed two turbines on their site at Loughbeg. The report correctly states that the advice given considered the proposal to be out of scale and over-dominant. However, the following additional advice under para. E of the same document was also provided.

in daves decision?

(D) Wider implications for Wind Energy in Co. Cork.

The proposal would involve bringing full size wind turbines into lowland, semi-urban areas, where they are likely to raise new issues, and create a precedent which may result in those issues arising in other places as well. Implications include:

- (a) in general, wind energy proposals up until now have been made in lightly populated upland areas. Relatively few people are affected, and there is a better chance that turbines will be in scale with the landscape. Wind turbine proposals in lowland, semi-urbanised areas will affect much larger numbers, and be more obviously out of scale with buildings. On the positive side, ambient noise levels are generally higher in lowland, semi-urban areas, so noise from turbines may be less of a problem.
- (b) Large blocks of land which do not have houses within 4-500m are much less likely to be available in this type of area, making it likely that most projects will be for 1 or 2 turbines
- (c) The consequence of (a) and (b) is that such proposals are likely to be disproportionately contentious, relative to the wind energy they would generate if permitted

Adopting an explicit CDP policy of only considering such turbines for major employers on large sites with autoproducer status would limit the precedent to some extent, but (a), (b) and (c) would still apply.

E. Wider implications for Ringaskiddy

One could restrict the precedent further, by limiting it to a designated area(s) within the County, on the basis that a single turbine serving a single business is likely to have a more unfavourable impact to benefit ratio, than several ones grouped close together. Three turbines serving 3 large industries are not going to have treble the impact of one turbine, but they may have treble the benefits. Ringaskiddy is a good place to explore the implications of this line of thought, as it has a number of pharmachem plants on large sites, and has prima facie potential.

The 5 plants in Ringaskiddy which might be considered to have potential on the basis of site size and distance/visual separation from the villages of Ringaskiddy and Shanbally are:

- (1) Novartis
- (2) Glaxo Smith Kline Beecham
- (3) Pfizer (Lough Beg)
- (4) De Puy
- (5) Centocor.

I have mapped these on a base with geodirectory information on the position of residences (so that separation distances can be allowed for). The potential problems which emerge are:

- (a) *proximity to plant buildings*: the parts of sites (2) and (4) which are more than 4-500m from residential properties are quite densely built up, raising the possibility that the turbines would affect employees, or that buildings would interfere with windtake.

3

The entire text of this document is attached as Appendix A to the SP's report.

2.2 Under paragraph 4, Site Context – Ringaskiddy, the population within the development boundary of the area is quoted at 1200 persons. It is acknowledged that amenities of residents must be protected but it should be noted that the number of observations received in relation to three of the four applications amounted to five for each one and the count on the final application was eight.

REPORT

Reference is made later in the report to impacts upon employees in the area. Two points arise here. The first is that the perceived impacts, including and in particular, visual impacts, are subjective. This point is made in the 2006 guidelines. The second point is that there have been few objections from residents to these applications and no objections from local employees. Reference is often rightly made in planning reports to the level of objection to applications and it is also relevant in this case. It is suggested that relatively low level of objection could be regarded as a measure of acceptance of status of the area as a strategic employment area and of the project itself.

2.3 Under paragraph 6, Policy Considerations, the 2006 guidelines are quoted in relation to the fact that the location of turbines in areas of natural and built heritage or in amenity areas is not precluded. Similarly, visibility does not preclude such developments. The guidelines also state that dominance is not synonymous with or indicative of adverse impact. (Para. 6.16)

2.4 The various relevant objectives of the CDP are outlined in the SP's report. Some additional objectives have been mentioned above. In relation to Chapter 7, ENV 3-1 is mentioned which covers archaeology. It is noted that the Planning Authority will have regard to the advice of the DEHLG in this regard. No negative advice has been received from this source in relation to these applications.

2.5 The FI response has addressed many of the issues raised in June in relation to the individual sites and I will revert to these in my final comments.

3. Senior Planner's Report – Assessment Section

3.1 Under Scale and Layout comparisons are made with other tall structures in Cork City and county. I note that the height quoted in the report is the hub height plus the blade radius. Whereas height is one of the criteria which must be considered in relation to visual impact, the overall bulk and width of structures should also be considered. I do not consider three rotating blades of dimensions perhaps less than 1 metre wide to be comparable to an apartment tower comprising a width of 20 metres or more. Clearly the scale or height is a function of the energy producing potential of the units.

3.2 The positioning of the turbines has been largely determined by the extent of the individual company sites. This is a direct consequence of the legal requirement that privately owned power distribution lines cannot cross public roads. I note the SP's comments in relation to the desirability of placing such developments in upland areas and on quiet peninsulas but this was not possible in these cases.

3.3 Under the paragraph headed "Context", the area is described as relatively small, very busy, historical, coastal, urban, industrial, recreational and residential

hinterland of Cork. This would appear to somewhat complicate the local designation of strategic employment location outlined in the CDP and LAP. I consider the impacts of the proposed structures generally diminish with distance from Ringaskiddy. It is clear that the SP sees a fundamental conflict with other areas and uses within the harbour area. The report concludes that the CDP support for renewable energy is outweighed by the sensitivity of the receiving environment. It is this balance which has now to be considered. However, leaving aside the perception of the overall impacts from the six turbines, which would appear to be confined, in my opinion, to visual impacts, the broader economic benefits are also a valid consideration. The landscape is described in the SP's report as highly sensitive and as having many protected views and prospects. I do not consider that the assessment of impact of the turbines based on the sweep area of the rotating blades is an appropriate one.

In the same section, the SP concludes that the turbines would have a serious impact upon the architectural and archaeological heritage of the harbour. The FI request required the applicants to further assess the architectural heritage impacts. I am satisfied that there will be no direct impacts upon important archaeological sites arising out of the development. I also have a difficulty understanding how such a development would have a visual impact upon the harbour's archaeology, which science relates to *"the study of human history and prehistory through the excavation of sites and the analysis of artefacts and other physical remains"*. (Ref./ Oxford Dictionary – On-line)

The assessment of impacts undertaken in relation to varying distances from Ringaskiddy appears to assume that visibility equates to displeasure. I do not accept that this is the case and I would refer to the 2006 guidelines which make reference to aesthetic considerations to consider in such projects including, inter alia, "Symbolism" in section 6.2 as follows;

"Symbolism, whereby a wind energy development represents or is a public sign for technological efficiency, progress, environmental cleanliness and utility."

Particular reference is made to Cobh cathedral and how it is observed from the mouth of the harbour. The photomontages do not suggest to me any sense of competition between the turbines and the cathedral. Local tourism is unlikely to be affected by the presence of the turbines in my opinion. I note that Fáilte Ireland were notified of the applications and no submissions were received from them in this regard.

I have examined the views from VSR's 31 and 32 which are singled out in the 5Km. assessment. Here again, the degree of impact is subjective. The layout of the turbines from these particular views is regular in nature and I do not find them objectionable. Cobh is also identified as a critical view, which I would accept. However, it should be noted that we have not received any objection from residents of Cobh.

REPORT

I see no conflict with the relocation of the Port of Cork and these turbines. No submission has been made by the Port Authority.

3.4 Under the heading "Residential Amenities/Shadow Flicker/Noise, the report states that up to 50 residential properties will be subject to shadow flicker to a degree that exceeds the 2006 guideline limits. The definitive limits which are quoted in the guidelines relate to properties which lie within 500 metres of a turbine. There are no proposed turbines within this distance of a residence. The only other relevant statement in the guidelines is that properties which lie at a distance of 10 rotor diameters or greater from a turbine are unlikely to be affected by shadow flicker. The implication is that flicker may remain an issue at distances of between 500m and 10 rotor diameters from a turbine but the guidelines do not apply any quantitative standards to such conditions. The assessment carried out in the EIS is based upon worst case scenarios. The projected potential extent and duration of shadow flicker events is calculated on the basis of a particular wind direction or range of same, clear skies, the turbine lying between the receptor and the sun and enough wind to turn the blades. Thus the worst case impact at Coolmore cross is 85 days or part thereof. The analysis suggest any such events would be of a limited duration and occur in early morning. It should also be noted that there are no properties within 500 metres of the turbines at this location. The necessity to shutdown in order to comply with guidelines and the frequency of same may be overestimated in the report. The report also states that no other application received by the PA to date has apparently adversely impacted so many residential properties". This conclusion should be measured against the basic standards as contained in the 2006 guidelines which do not appear to be breached and so do not support this conclusion. It is also suggested that the 2006 standards are confined to turbines with an overall height of 75m. or less. However, page 11 of the guidelines refer to 100m. high hub heights which represent the "current and near future wind farm technology".

3.5 Under the heading "Precedent", the report reiterates the CDP objective SET 4-1 in relation to the safeguarding of the strategic employment locations. This objective is contained in Chapter 3 of the CDP – Settlements. There are two further similar references in Chapter 5 – Economy and Employment as ECON 3-1(a) and ECON 3-2.

Development Plan Objectives: Industry	
ECON 3-1	Appropriate Uses In Industrial Areas (a) It is an objective of the County Development Plan to promote the development of industrial areas as the primary location for uses that include manufacturing, repairs, warehousing, distribution, open storage, waste materials treatment and recovery and transport operating centres. The development of inappropriate uses, such as office based industry and retailing will

REPORT

	not normally be encouraged.
--	-----------------------------

ECON 3-2	Locations for Large-Scale Industrial Development It is an objective to ensure that sufficient and suitable land is zoned for sustainable large-scale and general industry taking into account the objectives of this plan (including development to meet the likely needs of the chemical, pharmaceutical and oil refining sectors) at the major employment centres of Ringaskiddy, Whitegate, Carrigtwohill, Kilbarry and Little Island. Such land will, normally, be protected from inappropriate development that would prejudice its long-term development for these uses.
----------	--

I interpret these objectives SET 4-1, ECON 3-1(a) and ECON 3-2 as preventing the co-location of activities such as office based industry or retail warehousing uses in industrial areas in order to avoid conflict. It is suggested in the report that the erection of turbines may somehow undermine the strategic focus of the area. I believe the contrary to be the case and that the development of the turbines would strengthen the local economic base and reinforce the primary land use function.

4. Senior Planner's Report – Conclusions

Under paragraph 12, "Conclusions", the first section points to the current contribution of the local industry and the associated multiplier effects. The report continues with comment in relation to rationalisation within the pharmaceutical sector and changes in product type. It is also implied that manufacturing will inevitably move away from Cork and Ireland. It is my understanding that IDA Ireland remain committed to the attraction of high added value manufacturing to Ireland and stress other positives to an Irish base apart from costs. Two important manufacturing projects were announced within the past six months in the pharma/ biotech area, one at Lilly in Dunderrow and a second in Carrigtwohill from Sangart. Paragraph 5.2.9 of the CDP commits the Council to supporting the development of the county "as an internationally attractive cluster for the bio-pharma and ICT sectors". Of the four applicants, only two are currently engaged in traditional API small molecule manufacture, i.e. Novartis and GSK. Novartis have additional developable land adjoining their facility which would be suitable to a future biotechnology or traditional API manufacturing use. In addition to the traditional manufacturing activities at GSK, I am aware that a level of product research and development activity takes place on site. DePuy are engaged in joint implant

REPORT

manufacture and Janssen (Biologics) Ireland are a biotechnology company producing the more modern large molecule pharmaceutical products.

The report concludes that the development would dominate the harbour and be detrimental to both residents and amenity users as well as being detrimental to architectural heritage. It describes the potential benefits as being "relatively short term" and "accruing to the four companies in question". It states that wind farms of this scale are acceptable only in the context of large upland remote landscapes or off shore. Page 78 of the guidelines holds a matrix of "Landscape Character Based Recommendations" covering six character types. It does not suggest an outright ban on wind developments either in coastal or industrial areas. Whereas I do not dispute that the visual impact on certain locations around the harbour will be significant, I do not believe that visibility, or indeed dominance, equate to unacceptability. Neither do I accept that the impacts upon residents are unacceptable when measured against the guidelines. The impacts upon amenities, in my view, are restricted to visual impacts and these are subjective and qualitative in nature. I would again point to the relatively low numbers of observations received by the PA.

I do not agree with the statement that the benefits may be short term and I believe it is incumbent upon us to do all in our power to support existing industries who provide employment directly and indirectly in the county. The balanced assessment of these proposals will be a testament to our intent and to our ability to attract further investment in the local economy. The attribution of the benefits to "four companies" alone is mistaken in my view. The critical importance of industrial activity in Ringaskiddy has been referred to earlier in this report.

I have commented earlier in this report on the site location aspects of the guidelines and I do not believe that they restrict the development of turbines such as proposed to upland or off shore areas.

In relation to the impact upon the harbour landscape, I would comment that since Pfizer located their first plant in Ringaskiddy in 1970, the nature of landscape itself has changed in line with the continuing development. Indeed prior to the development of the various military fortifications in the harbour, a different landscape existed. Change occurs over time.

In summary, I disagree with the SP in relation to a number of key areas.

- The future of pharma/bio pharma and metal manufacturing in Ireland
- The potential economic benefits of the proposal
- The degree of visual impact
- The significance afforded to the core designated land use in Ringaskiddy, i.e. strategic employment location, versus other interests.
- Interpretation of concerns of other stakeholders concerns. Although reference is made to potential concerns of the Port, Tourist bodies, other

industries and DECLG (Archaeology), no adverse submissions were received from any external body representing these stakeholders.

5. Responses to Further Information Requests from each applicant.

Some issues raised relate to the individual sites and others were common to all sites.

In relation to visual impact, further photomontages were requested which complied with the requirements of the 2006 guidelines. The applicants have made a robust case in relation to their original submission. However, the fact remains that the 2006 guidelines represent the best practice nationally and the required photomontages at the specified focal length have now been provided for targeted locations as requested.

Impacts upon bird life, shadow flicker, noise and archaeology are dealt with individually below. Water services issues arise only on the Novartis file and the Irish Aviation Authority have now confirmed that they have no objection to the proposals.

The NRA/NRDO also requested FI on shadow flicker in relation to roads, cable routing and a setback from the line of the proposed N28 for the Janssen unit. The applicants have responded adequately to the first two issues and the setback will be considered below.

5.1 GSK

There were six items of further information requested from the applicants.

The first item related to visual impact and this has been addressed above.

Item 2 was the risk to feeding birds at roosting site F. This issue has been addressed.

The third item related to shadow flicker. No receptors have been identified who would be impacted upon to a degree which contravenes the 2006 guidelines. A related issue was the plinth height and terrain assumptions and whether these had been taken into account in the shadow flicker assessment. A summary of priority residences impacts was requested and on residence ID 5 in particular. (Issues 4 and 5).

Item 4 related to noise. Noise forms part of the IPPC licence for the site as a whole and the PA are precluded from imposing conditions which relate to environmental pollution in such cases.

Item 5 related to aviation. IAA have confirmed that they have no objection.

Roads issues under item 6 have been addressed.

5.2 Janssen

In this file, 7 items of FI were requested.

Item 1 related to visual impact which has been addressed above.

Item 2 was to assess the risk of disturbance to the black tailed godwit which has been addressed.

Item 3 related to shadow flicker which has been covered by condition.

Item 4 requested absent information relating to noise and vibration. Janssen Biologics are an IPPC facility. Noise and vibration form part of the IPPC licence for the site as a whole and the PA are precluded from imposing conditions which relate to environmental pollution in such cases.

Item 5 related to the extent of undisturbed ground at the turbine site and potential archaeological impacts. The applicants have confirmed that the site forms part of a disused car park which ground had previously been disturbed.

The final two queries aviation and roads related have been addressed. The turbine has been relocated slightly to move it away from the future line of the proposed N28.

5.3 DePuy

There were 11 items of FI on this file.

The first item related to visual impact which I have addressed above. In particular FI was requested on the cumulative effect of the six turbines on the architectural heritage of the harbour and inter-visibility of monuments. The SP's additional report outlines that there is no physical obstruction between the adjoining Martello Tower and other military fortifications in the harbour. However, concern is restated about the visibility of the proposed turbines in the vicinity of the tower and the wider harbour. I regard the impacts as acceptable.

Item 2 related to impacts on roosting and feeding sites K and L and potential for collision and displacement. These issues has been addressed.

Item 3 related to shadow flicker which has been covered by condition. My comments earlier in this report on the requirements of the Wind Guidelines are relevant here. I disagree with the SP's conclusion that the guideline limits have been breached.

REPORT

Item 4 related to noise. In this case, the site is not subject to IPPC licensing and so noise can be properly considered as part of the file assessment. The response to the FI is regarded as satisfactory by the SP in this regard.

Item 5 was aviation related and has been addressed as has item 6, roads issues.

5.4 Novartis

There were seven items in this FI request.

Visual impact was dealt with above. Bird impacts were item 2 and the Sp has confirmed that this matter has been adequately addressed.

Item 3 related to shadow flicker which has been covered by condition. My comments earlier in this report on the requirements of the Wind Guidelines are relevant here. I disagree with the SP's conclusion that the guideline limits have been breached.

Noise was item 4. Noise forms part of the IPPC licence for the site as a whole and the PA are precluded from imposing conditions which relate to environmental pollution in such cases.

Water Services was item 5. The issue relating to a nearby 1200mm. watermain has been resolved.

Item 6 related to potential aviation impacts. The IAA have now confirmed they have no objection to the proposals.

Item 7 – roads shadow flicker and cabling have been covered above.

6. Decision

Grant all four applications subject to appropriate conditions.

7. Conditions

The Area Planner has drafted a list of conditions in respect of each of the four applications following the decision to grant permission. The following amendments shall be made to these schedules.

7.1 GSK - Draft conditions report dated 14/2/12

REPORT

Due to the IPPC nature of the facility, the following draft conditions should be omitted; 12, 13, 14, 15, 16, 17 and 25. Condition 9 should be amended to include the word "intermittent" between the words "the" and "switching" in the last sentence.

As condition 10 would exceed the requirements of the 2006 guidelines, it will be omitted. Condition 18 shall be amended to reflect that it relates to construction impacts only. As the IAA has confirmed that they have no objection to the proposal, omit condition 21.

Condition 29 should be amended to read as follows

"The use of helicopters during the construction of the facility should be minimised due to the potential impact upon the adjoining SPA. Any use of helicopters outside of the period April to August inclusive in any year shall only be with the prior agreement of the Planning Authority".

7.2 Janssen – Draft conditions report dated 13/2/12

As this is also an IPPC facility, omit draft conditions 12, 13, 14, 16, 17 and 19. Omit condition 10 for the reason outlined above. Amend condition 18 to cover construction impacts only. Omit condition 22 as IAA has confirmed no objection to proposal. Condition 9 should be amended to include the word "intermittent" between the words "the" and "switching" in the last sentence.

7.3 De Puy – Draft conditions report dated 13/2/12

Omit condition 6. Omit condition 10 as it exceeds 2006 guideline requirements. I have reviewed the Environmental Officer's report of February 2nd. I do not regard the 2 dB reduction proposed in draft Condition 13 necessary in the light of the predicted noise impacts. Omit condition 13. Omit condition 22 as IAA has confirmed no objection to proposal. Condition 9 should be amended to include the word "intermittent" between the words "the" and "switching" in the last sentence.

7.4 Novartis – Draft conditions report dated 13/2/12

Omit condition 22 as IAA has confirmed no objection to proposal. IPPC regulated site, omit conditions 12, 13, 14, 15, 17, 18 and 19. Amend condition 20 to cover construction impacts only. Omit condition 23 as IAA has confirmed they have no objection to the proposal. Condition 9 should be amended to include the word "intermittent" between the words "the" and "switching" in the last sentence.

D. Daly
Divisional Manager
15/2/2012

REPORT

*For inspection purposes only.
Consent of copyright owner required for any other use.*

REPORT

Files S/11/4944, S/11/4945, S/11/4946 and S/11/4969

The following schedule shall be attached to each of the above files.

First Schedule

Notwithstanding the recommendations on file, it is considered for the reasons set out in my report dated 15/2/2012 that the proposed development would not seriously injure the amenities of the area and would be in accordance with the proper planning and development of the area, subject to compliance with the conditions set out in the Second Schedule.

D. Daly
Divisional Manager
15/2/2012

*For inspection purposes only.
Consent of copyright owner required for any other use.*

Conditions/Reasons



Declan Daly
15/02/2012

SENIOR PLANNER'S REPORT

APPLICATION NO.	11/04945
APPLICANT	Janssen Biologics (Ireland)
DESCRIPTION	Erection of 1 no. wind turbine with hub height of up to 100m, blade radius of up to 50.5m and overall height from ground to tip of blade of up to 150.5m, upgrade of existing site roads, construction of internal site tracks and all other associated works
LOCATION	Barnahely Ringaskiddy Co Cork
DECISION DUE DATE	23/02/2012

Assessment

Background Comments

An initial query was received by the Planning Authority with respect to the provision of 2 no. turbines on the site of De Puy at Loughbeg in Ringaskiddy in the later 2000's, however, the planning advice given at that time was that the proposed 2 no. turbines would be "out of scale for its location and likely to be an over-dominant features in the Lower Harbour area" (see Appendix A).

More recently in later 2009 The Cork Lower Harbour Energy Group (CLHEG) was established and a presentation was made to the management of Cork County Council with respect to the erection of a number of turbines on existing sites occupied by pharmaceutical firms in the Ringaskiddy area. In response, it was indicated that there were implications for the County Development Plan and it was considered that the proposed development would have necessitated a material contravention of the Plan. It was also advised that photomontages would be required to assess the visual impacts on scenic landscape, scenic routes etc, the impact on the N28 would have to be assessed as would the impacts of the proposed development on residential amenities by way of noise, shadow flicker etc. It was also advised that the impact of the proposed turbines on birds would be required.

Cork County Council also received a request from IDA Ireland to vary the Cork County Development Plan 2009. In December 2010 the Cork County Development Plan 2009 was amended with the inclusion of the new specific objective INF 7-4 Wind Energy Projects. In effect proposals for wind energy development in the Lower Harbour as well as other large scale

SENIOR PLANNER'S REPORT

industrial development areas would no longer be materially contrary to the County Development Plan and could be considered on their merits, having regard to normal planning criteria.

The following report has been prepared in response to and assesses a single application i.e. 11/4945, there are further 3 no. pending applications, i.e. Planning Reg. No's 11/4944, 11/4946, 11/4969 submitted to Cork County Council by 3 no. existing pharmaceutical industries De Puy (Ireland), Novartis Ringaskiddy Limited and GlaxoSmithKline Beecham (Cork) Ltd, that operate in Ringaskiddy and Curraghbinny, County Cork. Both the subject application and the 3 n. other pending applications are located within the development boundary of the Strategic Employment Centre of Ringaskiddy, as designated in the Cork County Development Plan 2009 and relate to proposals to install wind turbines with hub heights of up to 100 m and with rotar radii of approximately 50.5 m on established industry / enterprise sites. In each of the current pending applications, permission is sought for a 10 year duration.

The Planning Authority did engage in preplanning discussions with the agent for all of the above applications at preplanning stage. Having consulted with persons within Cork County Council, including the Senior Architect (see Appendix B), concern was clearly expressed at preplanning stage with respect to the nature of the proposed development, most particularly with respect to the visual impact on the Harbour, landscape, scenic routes etc (see meeting minutes attached in Appendix C).

Given that each of the proposed turbines are to be located on land in the ownership of each of the applicants, involving 4 different site owners, the Planning Authority agreed that each applicant should submit individual applications for turbine(s) on their respective lands. However, the Planning Authority also advised that all applications should run concurrently and that the cumulative impacts of all 6 no. turbines would be a critical issue in the assessment of the applications. Accordingly, the following report deals with the specifics of the each individual site, and also assesses the cumulative issues associated with the 4 no. pending applications.

The Planning Authority also advised that having regard to the provisions of Schedule 5, Part 2, (3)(i) of the Planning and Development Regulations 2001 and to the cumulative impact of the 6 no. turbines proposed, which collectively would have an output greater 5 megawatts, that an Environmental Impact Statement would be required for each of the applications.

1. Site Notice and Date of Inspection

The sites of the 4 no. pending applications 11/4944, 11/4945, 11/4946 and 11/4969 were inspected 27/05/11 and all of the sites notices for each of the above applications were correctly displayed (see photographs in Appendix D).

2. Site Description

11/4945 Janssen Biologics (Ireland)

The subject site is stated as 39 ha in size, and relates to all of the lands within the ownership of the applicants Janssen Biologics (Ireland) at Barnahely, Ringaskiddy. However, the red line boundary for the purposes of this application relates to the area of land within the applicants ownership upon which 1 no. turbine is proposed together with the associated crane stoned area and a small proportion of access track, which is less than the 39 ha site area indicated in the submitted documentation. The subject site lies within the development boundary of Ringaskiddy and is located on land that is indicated in the 2005 Carrigaline Electoral Area Local Area Plan as new Industry / Enterprise and relates to part of the lands to which the specific zoning objective I-04 applies, i.e. "*Suitable for large stand-alone industry with provision for landscaping and access points*". The subject site is also located to the west of Ringaskiddy village and to the east of Shanbally, on a hilltop between the 2 no. centres of population.

The proposed turbine is proposed to be located to the west of the existing industrial structures occupied by Janssen Biologics and is also to be sited in the order of 250 m from the western boundary of their lands at Barnahely. It is noted that the access road indicated as the access to the proposed turbine is indicated from the west, however, it is noted that the junction with the established access road onto the N28 to the north is currently not operational and access to the location of the proposed turbine is currently gained from the south east, via the access road serving Janssen Biologics structures. To the south of the lands in the ownership of Janssen lies the established Novartis Ringaskiddy site and the 2 no. turbines proposed on the Novartis lands will be in relative close proximity to the turbine proposed on the Janssen lands.

The proposed turbine location is located in a relatively elevated location within Ringaskiddy and the turbine proposed on the subject lands relates to the highest turbine siting within the 4 no. current pending applications.

3. Site History

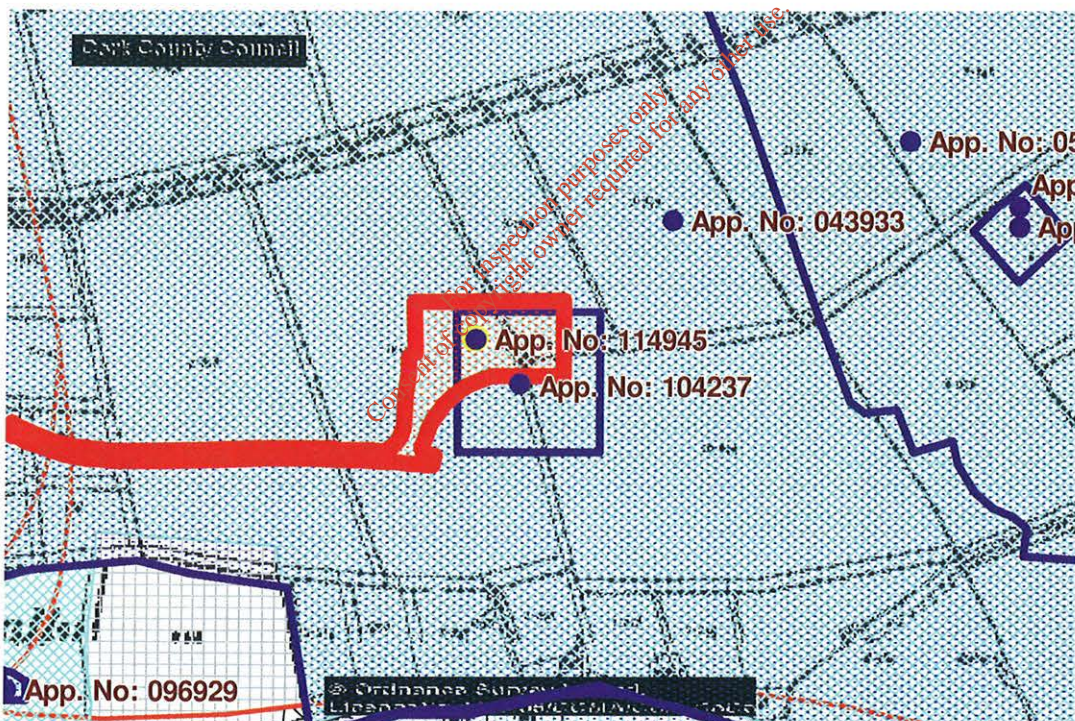
11/4945 Janssen Biologics

The subject site includes part of a site upon which permission was granted under Planning Reg. No. 10/4237 for the retention of 60m high meteorological data collection mast (for a period of two years).

SENIOR PLANNER'S REPORT

Elsewhere within the lands owned by the applicants, permission was also recently granted for an extension to existing car park comprising of an additional 70 car parking spaces, new tarmacadam surface, additional footpaths, lighting, drainage and all associated site works under Planning Reg. No. 11/4821.

Similarly, permission was also recently granted 31/05/11 under Planning Reg. No. 11/4890 for an extension to the duration of the permission granted under Planning Reg. No. 06/7499 for an additional 5 year period, which allowed for the completion of extensions to 3 no. previously permitted buildings and on site ancillary works to include manufacturing building extension to consist of 3 no. storeys comprising of process manufacturing areas and a mechanical plant room, warehouse extension to consist of a single storey garment change and cold storage areas, central utilities plant building extension consisting of double height utilities room, on site ancillary facilities to include 1 no. emergency generator, diesel storage tank, associated pumps and pipe rack, site access/circulation roads, 56 no. additional car parking spaces, landscaping, earth mounds and all other site development works above and below ground.



4. Site Context

Ringaskiddy

SENIOR PLANNER'S REPORT

All of the subject sites are located within the development boundary of Ringaskiddy, as designated in the Carrigaline Electoral Area Local Area Plan 2005 and each of the 4 no. sites relate to lands that are indicated as industry / enterprise in the 2005 LAP. Ringaskiddy is also designated as a Strategic Employment Centre in the Cork County Development Plan 2009, identified as an important location for industrial development, employment and economic activity. It is an objective of the 2009 County Development Plan to safeguard *"these strategic industrial locations against inappropriate development that would undermine their suitability for long-term strategic use"*, as stated in the specific objective SET 4-1.

Specifically Ringaskiddy is one of the most significant employment areas in the County, which has attracted major, large scale high technology manufacturing plants, occupying large stand alone sites. Notwithstanding the presence of major industrial complexes in Ringaskiddy, approximately 1/3 of the peninsula of Ringaskiddy is currently in agricultural use but is zoned for industry / enterprise, mainly for large scale stand alone industry.

Ringaskiddy also adjoins Cork Harbour and is the location of modern deep-water port facilities, operated by the Port of Cork. Ringaskiddy is also the location of a naval and marine training institution.

Over the years Cork County Council has put a lot of effort into the appropriate siting of industrial buildings and associated structures into the undulating landscape within Ringaskiddy. Considerable effort and expense has also been expended in landscaping, involving both earth mounding and extensive planting. Nonetheless, the individual plant buildings remain the defining elements in the western side of the Lower Harbour.

While Ringaskiddy is designated as a Strategic Employment Centre, the development boundary of Ringaskiddy also incorporates the villages of Ringaskiddy and Shanbally. There are in the order of 1,200 people resident within the development boundary of Ringaskiddy and Ringaskiddy also provides for many other uses within its development boundary including community, educational, recreational facilities etc.

As stated in the Cork County Development Plan 2009, the specific objective SET 4-2 for Ringaskiddy states that *"it is an objective of this Plan to encourage the development of Ringaskiddy as a major location for port development and large-scale industry, taking account of the need to enhance public transport including the provision of a high quality green route and protect the environment of existing residential community, to continue the sustainable development of Ringaskiddy"*.

Cork Harbour

SENIOR PLANNER'S REPORT

As indicated, Ringaskiddy adjoins Cork Harbour, a harbour that is stated in the County Development Plan 2009 as one of the finest natural harbours in the world, a unique environment, with a rich and diverse heritage, landscape and mix of uses. The Lower Harbour is in essence a bowl shaped, busy, sheltered coastal zone, interspersed with low ridges, which also happens to be the principle gateway to the Cork region and is of national significance. Cork Harbour is a unique asset not only for Cork City and county, but also for the wider southwest region, with its importance well recognised in the Regional Planning Guidelines, the Cork Area Strategic Plan (CASP), the County Development Plan and Local Area Plans, including the Draft Local Area Plans.

There is a good concise summary of both the terrain and uses of the Lower Harbour in the EIS's which accompany these 4 no. applications. The Lower Harbour has approximately 7 miles of water from east west and north south at its widest, and incorporates a number of islands, including Great Island and Spike Island. Similarly, the Lower Harbour incorporates a number of centres of population, including Cobh, Passage West, Monkstown, Ringaskiddy and Crosshaven together with the industrial centres of Whitegate, Little Island and Ringaskiddy.

Within the Lower Harbour area Cork Harbour's sheltered and deep water channels facilitate shipping and boating activities, including tourism / recreational activities. Similarly, there are a number of high amenity areas/woodlands and hidden coves bounded by higher actively worked agricultural land. The higher areas within the Lower Harbour do not exceed 156 metres OD. The Harbour also has a number of significant archaeological/heritage/habitat features, some of which are listed for protection in the CDP 2009 including inter alia the Martello Tower in Ringaskiddy (RPS ID;00575). Other features range from internationally protected mudflats and Special Protection Areas (SPAs) to iconic structures like Cobh Cathedral.

Cork Harbour is in essence a mixed use working harbour, which adds to its attractiveness and interest.

5. Proposed Development (including supporting material)

This report relates to one of 4 no. pending applications, all of which collectively seek permission for 6 no. wind turbines on existing established industrial sites within the development boundary of Ringaskiddy:

- **11/4945 – Janssen Biologics** - Erection of 1 no. wind turbine with hub height of up to 100m, blade radius of up to 50.5m and overall height from ground to tip of blade of up to 150.5m, upgrade of existing site roads, construction of internal site tracks and all other associated works

This application has been accompanied by an EIS and an Appropriate Assessment, which relates to the proposed development on this site and also assesses the cumulative impacts of the 6 no. proposed turbines (i.e. 11/4944, 11/4946 and 11/4969).

6. Policy Considerations

(a) Relevant Ministerial Guidelines

Wind Energy Planning Guidelines, 2006 – The Guidelines offer advice to planning authorities on planning for wind energy through the development plan process and in determining applications. The guidelines are also intended to ensure a consistency of approach throughout the country in the identification of suitable locations for wind energy development and the treatment of planning applications for wind energy developments. The policy background for the promotion of renewable energy and wind energy is outlined and it is recommended that Planning Authorities incorporate policies and in County Development Plans, including identifying areas suitable or unsuitable to wind energy development and matters it will take into account in assessing planning applications for specific wind energy development proposals. It is also advised that the assessment of individual wind energy development proposals needs to be conducted within the context of a "plan-led" approach.

The Guidelines indicates that designation of an area for protection of natural or built heritage or as an amenity area does not automatically preclude wind energy development. However, consideration of any wind energy development in or near these areas must be subject to Ireland's obligations under the Habitats Directive, the EU (Birds) Directive and the Environmental Impact Assessment Directive.

Similarly, the visibility of a proposed wind energy development from designated views or prospects would not automatically preclude an area from future wind energy development but the inclusion of such objectives in a development plan is a material factor. The effect of wind energy development on tourism and recreational activities must be assessed and care needs to be taken to ensure that insensitively sited wind energy developments do not impact negatively on tourism potential.

The Guidelines also provides guidance for Planning Authorities with respect to the assessment of applications for wind energy development, environmental implications of such developments, and also provides detail on aesthetic considerations with respect to siting, design, cumulative impact, spacing, layout and height.

(b) Regional Planning Guidelines, 2010-2022, for the South West Regional Authority.

The Regional Guidelines outline that wave and wind technologies are expected to play a significant part in meeting additional demand, with excess renewably generated power being exported through an enhanced transmission grid to other regions within the state. It is also stated that one of the principal energy resources of the region include a growing network of wind powered electricity and the Guidelines identify that there is a growing network of wind powered electricity generators in Cork and Kerry and significant potential exists for additional electricity generation by sustainable wind, wave and tidal energy sources.

The Regional Planning Guidelines support the sustainable development of renewable energy generation subject to the sustainable development of local areas and the protection of areas of high scenic amenity. However, the Guidelines also states that possible effects on Natura 2000 Sites, including effects on water supply and hydrology, wildlife disturbance, habitat loss and species mortality associated with collisions should be an essential consideration when planning for renewables and these should be considered at the local or project-level stage.

Specifically, it is an objective of the Guidelines, as stated in RTS-09 Energy and Renewable Energy ".....to ensure that future strategies and plans for the promotion of renewable energy development and associated infrastructure development in the Region will promote the development of renewable energy resources in a sustainable manner. In particular, development of wind farms shall be subject to: the Wind Energy Planning Guidelines, consistency with proper planning and sustainable development, criteria such as design and landscape planning, natural heritage, environmental and amenity considerations".

(c) Cork County Development Plan 2009 (relevant specific objectives)

The statutory development plan for the area is Cork County Development Plan 2009-2015 and the following specific objectives are relevant to this application:

• **CHAPTER 3**

SET 4-1 The Role of the Strategic Employment Centres

(a) It is an objective to recognise, as special parts of the settlement network, those established settlements, which because of the strategic qualities have evolved as important locations for industrial development, employment and economic activity. (b) It is an objective to safeguard these strategic industrial locations against inappropriate development that would undermine their suitability for long-term strategic use".

SET 4-2: Ringaskiddy:

"It is an objective of this Plan to encourage the development of Ringaskiddy as a major location for port development and large-scale industry, taking account of the need to enhance public transport including the provision of a high quality green route and protect the environment of the existing residential community, to continue the sustainable development of Ringaskiddy".

- **CHAPTER 5**

ECON 2-1 Overall Employment Strategy:

.....(c) It is an objective to encourage continued growth in employment in the county and to stimulate economic investment in the bio-pharma sectors as well as traded services sector broadly in the areas and sectors identified in tables 5.2 and 5.3....."

ECON 6-2 Protection of Natural, Built and Cultural Heritage:

(a) It is an objective to protect and conserve those natural, built and cultural heritage features that form the resources on which the County's tourist industry is based. These features will include areas of important landscape, coastal scenery, areas of important wildlife interest, historic buildings and structures and the traditional form and appearance of many built up areas.

- **CHAPTER 6**

INF 7-2 Climate Change

"(a) It is an objective to support the National Climate Change Strategy and, in general to facilitate measures which seek to reduce emissions of greenhouse gases. (b) It is an objective to adopt sustainable planning strategies, such as integrated approach to land-use and transportation and facilitate mixed-use developments, so as to reduce greenhouse emissions".

INF 7-3 Renewable Energy Production:

"It is an objective generally to encourage the production of energy from renewable sources, including in particular that from biomass, waste material, solar, wave, micro hydro power and wind energy, subject to normal proper planning considerations, including in particular the impact on areas of environmental or landscape sensitivity".

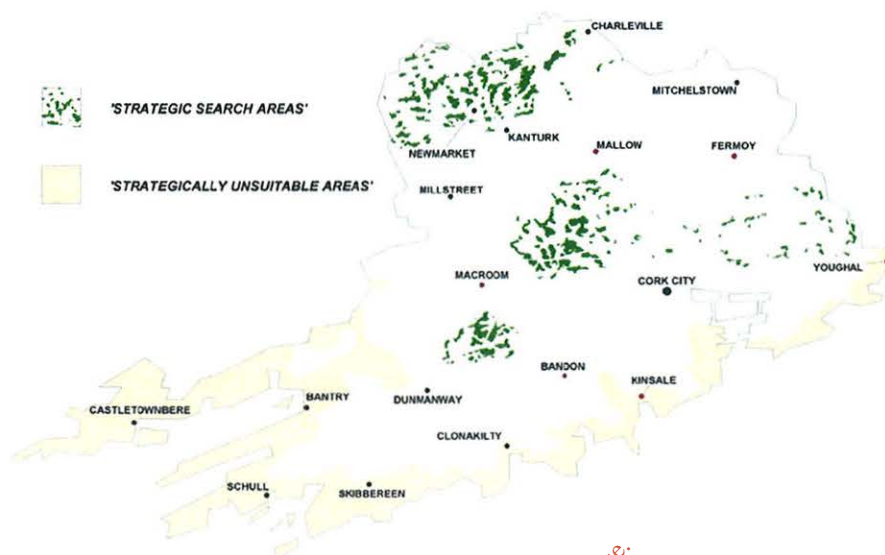


Figure 6.3: Strategic Wind Energy Areas

Extracted from County Development Plan 2009.

INF 7-4 Wind Energy Projects:

"(a) It is an objective to encourage prospective wind energy businesses and industries. In assessing potentially suitable locations for projects, potential wind farm developers should focus on the strategic search areas identified in the Plan and generally avoid wind energy projects in the strategically unsuitable areas identified in this Plan.

(b) It is an objective to support existing and established businesses and industries who wish to use wind energy to serve their own needs subject to proper planning and sustainable development. In particular, because of the potential for wind generated electricity to reduce the reliance of large scale industry on fossil fuel generated electricity, proposals located within the areas identified as suitable locations for large scale industrial development in objective ECON 3-2 of this plan will be considered on their merits subject to compliance with Article 6 of the EU Habitats Directive.

(c) It is an objective in the strategic search areas (and in those areas that are identified as neither strategic search areas nor strategically unsuitable areas), to consider new, or the expansion of existing, wind energy projects on their merits having regard to normal planning criteria including, in particular, the following:

- *The sensitivity of the landscape and of adjoining landscapes to wind energy projects;*
- *The scale, size and layout of the project, any cumulative effects due to other projects, and the degree to which impacts are highly visible over vast areas;*

- • *The visual impact of the project on protected views and prospects, and designated scenic landscapes as well as local visual impacts;*
- • *The impact of the project on nature conservation, archaeology and historic structures;*
- • *Local environmental impacts including noise and shadow flicker;*
- • *The visual and environmental impacts of associated development such as access roads, plant, grid connections etc.*
- • *The proximity and sensitivity of a recognised settlement,*
- • *The impact of the project on archaeology and historic structures,*
- • *The impact of nature conservation, in particular avoiding designated and proposed European sites.*

(d) Similar criteria would be taken into account in the strategically unsuitable areas except that (other than in areas to which objective ECON 3-2 relates) suitable projects will generally be on a smaller scale and on very special, carefully chosen sites”.

- **CHAPTER 7**

ENV 2-6 General Visual and Scenic Amenity:

“It is a general objective to protect the visual and scenic amenities of County Cork’s built and natural environment”.

ENV 2-7 Scenic Landscape

“It is a particular objective to preserve the visual and scenic amenities of those areas of natural beauty identified as ‘scenic landscape’ and shown in the scenic amenity maps in Volume 3 of this plan”.

ENV 2-8 Landscape Conservation Area(s):

“It is an objective to carry out an appraisal study in order to identify any area(s) or place(s) within the County as a Landscape Conservation Area in accordance with the Planning and Development Acts”.

ENV 2-9 General Views and Prospects:

“It is a general objective to preserve the character of all important views and prospects, particularly sea views, river or lake views, views of unspoilt mountains, upland or coastal landscapes, views of historical or cultural significance (including buildings and townscapes) and views of natural beauty as recognised in the Landscape Strategy”.

ENV 2-11 Scenic Routes:

"It is a particular objective to preserve the character of those views and prospects obtainable from scenic routes identified in this plan. These routes are shown on the scenic amenity maps in Volume 3 and listed in Volume 2 of this plan....."

ENV 2-13 Development on Scenic Routes:

(a) It is also an objective of the Planning Authority to require those seeking to carry out development in the environs of a scenic route an/or an area with important views and prospects, to demonstrate that there will be no adverse obstruction or degradation of the views towards and from vulnerable landscape features. In such areas, the appropriateness of the design, site layout, and landscaping of the proposed development must be demonstrated along with mitigation measures to prevent significant alterations to the appearance or character of the area. (b) It is an objective to encourage appropriate landscaping and screen planting of developments along scenic routes. Where scenic routes run through settlements street trees and ornamental landscaping may also be required....."

- (a) It is an objective to safeguard sites, features and objects of archaeological interest generally,*
(b) It is an objective of the Planning Authority to secure the preservation

ENV 3-1 Sites, Features and Objects of Archaeological Interest:

"(a) It is an objective to safeguard site, features and objects of archaeological interest generally.

(b) It is an objective of the Planning Authority to secure the preservation (i.e. preservation in situ or in exceptional cases preservation by record) of all archaeological monuments included in the Record of Monuments and Places as established under Section 12 of the national Monuments (Amendment) Act, 1994, and of sites, features and objects of archaeological and historical interest generally.

In securing such preservation, the planning authority will have regard to the advice and recommendations of the Department of the Environment, Heritage and Local Government".

ENV 3-3 Zones of Archaeological Potential:

It is an objective to protect the Zones of Archaeological Potential located within both urban and rural areas as identified in the Record of Monuments and Places".

ENV 4-1 General Protection of Structures:

(a) It is an objective to seek the protection of all structures within the County, which are of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest.....”

ENV 4-5 Protection of Non-Structural Elements of Built Heritage

It is an objective to protect important non-structural elements of the built heritage. These elements include historic gardens/designated landscapes, stone walls, landscapes and demesnes, curtilage features and street furniture, The Council will promote awareness and best practice in relation to these elements.

(d) Carrigaline Electoral Area Local Area Plan 2005

The overall strategy for Ringaskiddy, as specified in the Carrigaline LAP 2005 “*aims to consolidate the strategic industrial and port related role of Ringaskiddy, with very limited expansion of residential uses with amenity improvements to the village and improvement of community and recreation al facilities*”.

The importance of Cork Harbour is also outlined in the 2005 LAP in text contained in p. 24. The LAP recognises that Cork City and Harbour is an important component of the national economy, with the harbour (including Ringaskiddy) being particularly important for industry and employment. It is also stated that the harbour area “*also has a wealth of natural and built heritage of national significance, including the impressive combination of expansive enclosed harbour and imposing buildings such as Cobh, including Cobh Cathedral and the military and maritime heritage associated with such areas as Haulbowline, Spike Island, Fort Camden and Fort Carlisle*”. The LAP also states that “*its wetland areas are valued internationally due to the number and diversity of bird species it supports*”.

(e) Carrigaline Electoral Area Local Area Plan – Public Consultation Draft November 2010

The Draft LAP states that “*the strategic aims for Ringaskiddy are to reaffirm its strategic industrial and port related roles and seek to promote its potential for large-scale stand-alone industry*”.

7. Internal Consultants

11/4945 Janssen Biologics (Ireland)

SENIOR PLANNER'S REPORT

The report of the **Area Engineer** dated 26/05/11 indicates that the site proposes the use of existing entrances off the N28 and the R613 and these are satisfactory. The EIS notes that local road closures will be required to facilitate the movement of plant. A construction traffic management plan shall be submitted prior to commencement of any development. The application states that surface water will be disposed of to the public sewer. Public water supply is available if necessary. No objection from a roads point of view and appropriate conditions to apply in the event of permission are included.

The **Environment Officer** in his report dated 13/06/11 recommends the deferral of the application 11/4945 for further information to be submitted. It is indicated that there is a need to submit copies of part of the EIS, specifically Figures 9.1, 9.4 and 9.5, for a scaled map identifying noise sensitive locations. In addition the location of the referenced noise monitoring locations should be identified and it should be demonstrated that these are representative of nearest noise sensitive locations. Details of the computer model used in the calculation of predicted noise levels are required together with details of the time periods of the attended noise surveys. Similarly, the background noise assessments at the identified nearest noise sensitive locations should quantify over 10 minute periods the existing background noise levels, having regard to wind speed, wind direction and rainfall over the same periods. Additionally, background noise levels at the identified nearest noise sensitive locations need to be quantified separately for daytime, evening time and night-time periods and have due regard to wind directions downwind from the proposed turbines to the noise sensitive locations identified, covering a range of wind speeds. Any changes in the overall predicted noise levels arising from same, at the identified noise sensitive locations should be highlighted and commented on.

The **Conservation Officer** in her report dated 14/06/11 states that the proposed development, as a stand-alone development, will not directly impact on the architectural heritage. However, this application needs to be considered in the wider context of three other applications which were lodged simultaneously for a further five wind turbines in the Lower Cork Harbour. The fundamental question in this situation, with 4 no. pending applications, is if the benefits afforded to the individual companies by the erection of six wind turbines within the Lower Cork Harbour area, is significant enough to outweigh all the other impacts (negative or otherwise) that will be created as a result of these developments.

From an architectural heritage perspective, with the exception of the De Puy proposal, the remaining wind turbines individually do not impact directly on a particular protected structure. Nevertheless, Cork Harbour is exceptionally unique in the quality of its architectural heritage. There are numerous military fortifications, such as Spike Island, Fort Camden, Fort Davis, Cobh Fort, Templebreedy all of which are protected structures. There are also other defensive structures such as Martello Towers, gun magazines and warehouses, again most of which are protected structures and together form an impressive historic military landscape. The towns of Cobh, Passage West and Monkstown all have designated Architectural Conservation Areas and include numerous individual protected structures. Therefore the architectural heritage within the immediate and wider harbour area is of a very high quality.

SENIOR PLANNER'S REPORT

It is considered that the architectural heritage is neither sufficiently nor comprehensively addressed in the relevant chapters of the individual Environmental Impact Statements or in terms of the cumulative impact of all turbines. The scale, height, form, irregularly placed pattern and topographic context of the proposed turbines will mean that their visual impact will be extensive. Nevertheless, concern is also expressed regarding the cumulative visual impact in terms of the architectural heritage on the immediate surroundings, such as Spike Island, Haulbowline, Cobh, Rocky Island, Fort Camden and Fort Davis. Based on the information provided, the Conservation Officer is not entirely convinced that the cumulative impact of the turbines will not have a serious negative visual impact on the architectural heritage of the immediate surroundings and this should be given serious consideration when deliberating on the whether or not to grant permission for these developments.

The **Archaeologist** in her report dated 15/06/11 identifies that the proposed development is inter visible with the a number of archaeological and heritage structures within the Harbour area including CO087-053 Ringaskiddy Martello tower; CO087-06501-3: Spike island Military fortification; CO087-058: Carlisle Military fortification; CO087-05901-3: Haulbowline Military Barracks, Martello tower and star shaped fort; CO99-024: Camden Fort; CO087-105: Rocky Island Magazine. Reference is made to the policies contained in the Cork County Development Plan 2009 and specifically in relation to ENV 3-1, ENV 3-2 and ENV 3-3.

The EIS report notes that there are no archaeological sites listed in the Record of Monuments and Places on the site of the proposed turbine. There are fifty-five known archaeological sites within the study area (2km). It is considered that the study area should have incorporated a wider area incorporating the important inter visible monuments in Cork Harbour. The EIS report notes that the construction work associated with the proposed wind turbine will involve ground disturbance and the removal of the existing material which has been introduced since the construction of the facility. The report concludes that the proposed development will not directly impact on any known archaeological site and due to the disturbed nature of the site will not impact on any potential subsurface archaeology within the development site. Nonetheless, the disturbed nature of the proposed development site needs to be clarified. Generally the Archaeologist is satisfied that the proposed development will not directly impact on any known or potential archaeological site.

With respect to indirect or visual impact, it is considered that the visual impact of what is proposed is the critical issued for this singular turbine and of the cumulative impact of all 6 no. turbines proposed. The EIS archaeological report does not adequately assess the visual impact with no criteria provided by the consultant archaeologist in this regard. Similarly, the report does not make reference to the Visual Impact Viewpoint Assessment (EIS Chapter 8.5.2) within the EIS and its accompanying photomontage.

As an individual turbine CEN 1, by reason of its height and scale, it will inevitably have a visual impact on most of the upstanding monuments inter visible from it. The EIS archaeological report identifies that the turbine will have a visual impact on ringfort CO087-048 which stands 510m to south. It is also noted that there will be a visual impact on the Church and graveyard

(CO087-051:01 & 02) and Fortified house CO087095201) at Barnahely c. 900m to southeast of CEN 1 and states that when the church and graveyard is viewed from the south, the turbine will be prominent behind and to the north. The EIS report notes that the proposed turbine will not have a strong visual impact on any other archaeological or cultural heritage within the study area. However, there is no mention of the impact on the Martello tower at Ringaskiddy (087-053) within the study and inter visible to east. In the Impact Viewpoint Assessment (EIS Chapter 8.5.2) in regards to the Janseen turbines it is noted that from a visual perspective (regardless of the archaeological monuments) that views 42 from the Martello tower will incur 'moderate' impact at operational stage and 'significant' impact at the cumulative level.

It is acknowledged that the development of wind turbines is seen as a positive and clean technology and an important part of our national strategy. However, in the historical context, Cork harbour has important archaeological/heritage monuments which are important in their own right and as a collective group and have significant tourist potential. Care needs to be taken to take an integrated approach to the decision making and that proposal for development such as this does not erode from the overall significance of the place. With regard to the cumulative impact, the EIS archaeological report stated that CEN 1 is a single entity in the Lower Harbour area and will impact slightly on the archaeological and cultural heritage of the area as a whole, however, the 'occurrence of a further five associated turbines will increase that impact' but concludes that the overall impact will be slight. The EIS archaeological report does provide a descriptive account of the archaeology of the harbour area outside the 2km study area but does not include the most the visual assessment. It is stated that it is clear from the photomontages provided that this is a critical issue and should have been addressed in the report. The photomontages demonstrate that due to the height; scale and location the turbines collectively they will dominate the west side of the Harbour and will be visual impacting on all inter visible heritage features/landscapes across the Harbour particularly on CO087-06501-3: Spike island Military fortification; CO087-058: Carlisle Military fortification; CO087-05901-3: Haulbowline Military Barracks, Martello tower and star shaped fort; CO99-024: Camden Fort. The archaeological consultant has neglected to address this serious issue. The Impact Viewpoint Assessment (EIS Chapter 8.5.2) for the Janssen Turbine notes from a visual perspective that views 9 from Fort Mitchell Spike Island; 10 from Fort Camden; 26 from Rocky Island; 42 Ringaskiddy Martello Tower that the cumulative impact will be significant. This negative visual impact is also heightened by the random siting of the turbines across the landscape.

The proposed Turbine CEN 1 will not directly impact on any known archaeology above or below the ground and the turbine CEN 1 will not in itself significantly create negative impact on the overall heritage of Cork Harbour. However, when viewed as part of a collective group whose cumulative impact will have a significant negative effect on the heritage monuments within the Harbour, specifically the coastal fortifications at Spike Island and the Martello Tower in Ringaskiddy and to the lesser extent on Camden and Carlisle fortifications. The photomontages clearly demonstrate the negative visual impact that there will have on the harbour setting and from an archaeological perspective from the coastal fortifications. Military defences at Spike Island and Camden Fort are being developed as important focal tourist points within the harbour and the Martello Tower has also been identified as having significant potential for future heritage tourism development and development should not be permitted that will negatively impact on these site.

Ms. Sharon Casey the **Heritage Officer** in her report dated 15/06/11 identifies that the turbine is proposed to be located near the Cork Harbour Special Protection Area. An EIS has been submitted in support of this application and a Natura Impact Statement has also been provided. Studies carried out have addressed potential impacts on habitats and on a range of species including birds, bats and other mammalian species including badger and otter. No significant impacts on habitats or species other than birds are predicted in any of the reports and this is accepted. Potential impacts relating to construction can be mitigated by the control of timing of works and the employment of methods which will minimise disturbance to species.

The principle risks to wintering birds using the harbour and adjacent area for winter feeding and roosting arise from the operation of the wind turbines and include the risk of disturbance displacement (avoidance of feeding or roosting sites), collision and the risk of the creation of a barrier effect to movement. The Heritage Officer is satisfied that given the relatively low number of turbines proposed to be built (cumulatively 6 no.) and the spread out nature of these, that there will be no significant barrier created which would result in increased collision risk or avoidance behaviour.

One feeding site is located within approx. 300 m of proposed turbine and the primary species engaged identified to be field feeding in this study are Curlew, Black-tailed Godwit and Lapwing. The potential for disturbance related impacts on Black-tailed Godwit feeding in the agricultural field identified as a primary feeding area within 300 m of the proposed turbine marked Barnahely foraging field E in the radar studies not been ruled out by the EIS and further information is required in relation to this issue. The significance of any impacts should be assessed, when considered in their own right and cumulatively having regard to disturbance risks which may be caused by the other proposed turbines.

Radar studies produced very limited results in relation to the immediate vicinity of the proposed turbine, as it is proposed to be located within a zone of very limited detection. Field studies identified ten species flying with 500 m of the proposed turbine location and include three species for which the SPA is designated (Cormorant, Black-tailed Godwit and Curlew) and six species which have been identified to be vulnerable to collision risk (Cormorant, Black-tailed godwit, Curlew, Peregrine Falcon, Sparrowhawk, Buzzard and Kestrel), however all of these species were recorded on an infrequent basis. It is argued that the risk of collision at this proposed site is imperceptible to slight for most species and the Heritage Officer is satisfied with this conclusion on the basis the relative frequency of records around the site for each of these species was low.

Further information is required to enable the further assessment of this application.

8. External Consultants

11/4945 Janssen Biologics (Ireland)

The **Irish Aviation Authority** in their submission received 19/05/11 requests and extension to the time for consideration of the application, as it may have implications for radar installations at Cork Airport. The IAA requests that the Council defer its determination of this application until the end of September 2011.

The submission of the Development Applications Unit of the **Department of the Environment** received 31/05/11 with respect to natural heritage is noted. It is identified that the proposed turbine is located approximately 700 m from the boundary of the proposed Special Protection Area Cork Harbour SPA. The main protection issue is identified as collision risk of birds, migrating, dispersing to and from the Lough Beg to Monkstown creek part of the SPA and also for curlew, dispersing to and from Lough Beg to and from the fields north-west of Novartis at Barnahely. It is indicated that there is no reason to disagree with the conclusion of the Appropriate Assessment of a lack of adverse impacts on Cormorants. In relation to Curlews it is indicated that given flight height, the relatively low numbers involved, low collision risk rating, recorded and likely avoidance of the industrial buildings and operation turbines and the low numbers of turbines in the area, the conclusion of low collision risk to curlew is taken as correct. However, further monitoring and adaptive land management needs to be carried out to avoid attracting the birds too close to turbines as they are known to feed in this area. In relation to gulls, further monitoring is recommended. As gulls have a predilection for perching on tall structure, perch-proof nacelles should only be permitted.

In the light of the radar study, appropriate assessment data, EIS data and published literature and guidance, it is stated that there is no scientific reason to doubt that the proposed turbine will not have an adverse effect on the integrity of the Special Protection Area if appropriate mitigation is carried out. Monitoring of bird casualties should be carried out in accordance with the EIA process. Appropriate conditions (3 no.) to be included in any grant of permission are also detailed.

The **Health Services Executive** in their submission received 08/06/11, which comments on Environmental Health issues has made comments with respect to impact on humans, noise and vibration, shadow flicker, dust, water/hydrology/geology. It is noted that reference is made to the nearest residences to the proposed development at Upper Shanbally, approximately 640 m to the west. It is also outlined that there are also noise sensitive locations at the church at Shanbally and the nearest dwellings at Ringaskiddy, which is approximately 700 m to the east. Reference is made to the 2006 Wind Energy Development Guidelines of the Department of the Environment and the 500m distance between the nearest turbine and any noise sensitive property. It is stated that it is essential the turbine selected does not produce high mechanical

noise as a key mitigation measure. For a wind turbine with characteristics similar to the Enercon E-101, the residual noise impact is expected to comply with the limit values and non-compliance with draft EPA guidelines for cumulative industrial and turbine noise. In relation to water / hydrology / geology, it is envisaged that if the measures outlined in the EIS are implemented, the risk of spills and contamination of soils and water will be minimised. In relation to shadow flicker, it is noted that there are no residences within 500 m of the turbine. It is also identified that the residences which will experience the worst-case shadow flicker are located at Upper Shanbally, with the potential for flicker effects between the hours of 5.30 and 6.30 in the morning around mid-summer. The submission also states that "if shadow flicker did result in adversely impacting the residents of Shanbally or surrounding areas the nuisance could be mitigated by switching off the turbine, as per DoEHLG guidelines.

The Environmental Health service has no objection in principle to the proposed development.

9. Public Submissions

11/4945 Janssen Biologics (Ireland)

Five third part submission has been received with respect to this application and the concerns expressed in same relate to the following issues:

(Noted that one submission signed by a number of residents).

- Questioning the appropriateness of this application being one of 4 no. separate applications, particularly as the development on subject site forms part of a larger project. Concerned about the visual impact of the proposed turbines and the impact of same on property values of dwellings in the vicinity.
- Concerned about alternative site(s) and the consideration of an off-site wind farm may be preferable from an environmental and community impact perspective.
- Concerned about the visual impact of the proposed turbines on the surrounding landscape, proposals are out of scale and character with the landscape, existing buildings and neighbouring properties. Considered that the proposed development is overbearing. Contended that the cumulative impact of all 6 no. turbines on the local harbour environment would be very significant.
- Concerned about the accuracy of the photomontages, which it is considered are not fully representative of the visual impact. Visual impact will be more vivid than presented.
- Concerned about the separation distances between the proposed turbines and existing residential properties. Put forward that the 500 m setback between

SENIOR PLANNER'S REPORT

- proposed turbines and existing houses is insufficient, particularly, with respect to ice throw, fire, the scattering of debris, human safety etc.
- Concerned regarding the overbearing nature of the proposed development, in close proximity to a residential area. Proposal is out of scale and detrimental to residents.
 - Concerned regarding the impact of the proposed turbines on property values of dwellings in the vicinity.
 - Proposals would lead to significant detriment to scenic amenity of the area. No possibility of maximising visual harmony, as recommended in the Department of the Environment, Heritage and Local Government Guidelines and their visual relationship to Cobh Cathedral would be shocking. Proposals would also seriously impact on other areas of the harbour which are important in terms of scenic quality and tourism potential, including negatively impacting on the harbour waters, Roches Point, Crosshaven, East Ferry, Spike Island etc.
 - Concerned about the impact of the proposed turbines on existing amenities, such as Curraghbinny Wood and Barnahely Road.
 - Concerned about noise impacts of the proposed turbines, generating additional noise to the noise generated by existing onsite activities on the subject Novartis site. Similarly, concern is expressed with respect to night-time noise implications of the proposed turbines. Possible that additional noise generated at night time will exceed acceptable limits. Intervening landscape between subject site and neighbouring houses offers no protection to night time noise.
 - Questioning the accuracy of the sound measurements presented in the application. Contended that unweighted standard is a more correct measurement standard and it would detect the full range of noise from any large scale wind turbine, including infrasound. Put forward that hilly terrain in Ringaskiddy and Curraghbinny will further amplify the emitted infrasound.
 - Concerned regarding the impact(s) of shadow flicker on nearby dwellings.
 - Concerned about the impact of the proposed turbines on human health.
 - Concern is expressed about the adequacy of the public consultations engaged in.
 - Concerned about the confined nature of the site and considered that the site is unsuitable, especially when taken in conjunction with the other pending proposals on the Novartis, Janssen Biologics and GlaxoSmithKline sites.
 - Concerned about the proximity of the turbines to the SPA, concerned that physical presence of turbines together with associated noise and shadow flicker would impact on SPA.
 - Concerned about the impacts of the proposed turbines on tourism.
 - Concern over the lack of consideration of alternatives options.
 - Concerned regarding the precedent that the grant of permission would create around Cork Harbour for additional turbines.
 - Concern about the assessment of this application in the absence of an overall study for the development of the harbour.
 - Concern over the impact of the proposed development on wildlife, including birds and bats. Questioning the radar tracking of birds submitted, taken at the most dormant part of the year with regards to bird life.
 - Proposals disruptive to microwave radio signals,

10. Public Representative Submissions

None to date

11. Assessment

Having inspected the site and reviewed the file documents, I consider that the proposed development can be assessed under the following headings:

- **Policy**
- **Scale / layout**
- **Context**
- **Landscape / visual impact**
- **Residential amenities / shadow flicker / noise**
- **Archaeology / Architectural Heritage/ Impact on Special Protection Area**
- **Precedent**
- **Environmental Impact Statement / Appropriate Assessment**
- **Impacts on Aviation**

Policy

The Department of the Environment's 'Wind Energy Development Planning Guidelines, 2006' highlight that the development of renewable energy sources and the reduction of greenhouse gas emissions are being promoted at EU and national level. The National Development Plan, 2007 – 2013, promotes the development of renewable energy, with a 15% commitment to the use of renewables' in electricity production by 2010. As this target, has been met, the 2020 target, though not yet finalised, is likely to be 20%. (This figure of 20% accords with European Policy).

Cork County Development Plan 2009 sets out the policy and objectives for energy and in particular renewable energy and wind energy in Chapter 6 under the heading Transport and Infrastructure. The policies and objectives of the Council relating to renewable energy is generally positive and contained in subsection 6.5.5 to 6.7.10 and objectives INF 7 – 2 and INF 7 – 3, subject to the need to protect the environment, having regard to 'the proper planning and development of the area' and 'landscape sensitivity'. The Wind Energy section in subsection 6.7.11 to 6.7.14 and objective INF 7-4 advocates a plan led approach. Objective INF 7-4 encourages 'prospective wind energy businesses' to focus on strategic search areas and supports 'existing businesses and industries who wish to use wind energy to serve their own needs'. Parts of the county are identified as 'Strategic Search Areas' and parts as 'Strategically Unsuitable Areas' and these are identified in an accompanying map figure 6.3 (see above). The Council's policy is in accordance with the Wind Energy Guidelines 2006. The majority of the county is in neither the, strategic search area, nor the strategically unsuitable area and in the balance of the county 'proposals are considered on their merits' subject to safeguarding criteria

SENIOR PLANNER'S REPORT

contained in INF 7-4 c. Wind energy projects are therefore acceptable in principle in most of the county subject to the list of safeguards itemised in INF 7 – 4 (*see above*).

Ringaskiddy is identified in the County Development Plan 2009 as one of only four Strategic Employment Centres in the county. This is contained in subsection 3.4.4. to 3.4.5 and objective SET 4-2. This is also reinforced in Chapter 5 under the heading Economy and Employment where objective ECON 3-2 identifies these four areas (plus Whitegate) as locations for 'large scale industrial development'. The effect of the variation to the CDP in December 2010 is the removal of Ringaskiddy from being a 'strategically unsuitable area', for wind energy projects (*see figure 6.3, Strategic Wind Energy Areas map above, CDP 2009*).

Therefore, subject to safeguards, the principle of wind energy projects in Ringaskiddy is acceptable, and each application has to be dealt with on its merits.

The Carrigaline Area Electoral Area Local Area Plan 2005 and the Draft Carrigaline Electoral Area Local Area Plan 2010 elaborate on the 'strategic employment designation' for Ringaskiddy in the CDP. Under the following principle headings, strategic aims, population, employment, infrastructure, environment and heritage together with the land use zonings of the area and their attendant objectives. The locations of all six turbines are within the 'Existing Built –Up Area' i.e. within their respective sites as identified in the Ringaskiddy zoning map in the LAP.

If the proposal will, as stated in the EIS 'help to secure local industry' it will strengthen the role of Ringaskiddy as a strategic employment designation and help secure some of the objectives of the CDP and the LAP.

The proposals accord with the Councils policy in reducing green house gases, it is in accordance with INF 7-2 (Climate Change) of the CDP 2009. It also supports the Councils policy on renewable energy as per INF 7-3 but this has to be balanced against the impact on 'areas of environmental or landscape sensitivity'.

Objective INF 7-4 is the critical objective in adjudicating on the proposed development and in particular, the set of nine criteria outlined against which any renewal energy project has to be assessed. The Objectives ENV 2-6 to 2-13 pertaining to Scenic Amenity, Scenic Landscapes, Scenic Routes etc listed above are also critical as are the Objectives relating to employment, climate change and architectural heritage; SET 4-1, 4-2, ECON 2-1, 6-2, INF 7-22 and ENV 3-1, 3-2, 3-4, 4-1 and 4-5.

Scale / Layout

SENIOR PLANNER'S REPORT

The proposed six turbines are very large, with a proposed maximum hub height of 100m and a rotor blade diameter of 101m, giving a total tip height of 150.5m with a base diameter of 7m reducing to 3m at the nacelle. The following table gives the relative heights of other manmade structures in Cork which also happens to have the two tallest buildings in the 26 counties, the Elysian and County Hall.

Structure	Height in Metres
Aghada Power Station Chimney	152m
Cobh Cathedral	91.4
Elysian	71m
Co Hall	67m
Proposed Turbines	150.5m

The turbines are therefore twice the height of either of the two tallest buildings in the country. In addition to this, the pad level or finished floor levels of the turbines above sea level has to be considered. When these are added to the overall height the following table gives the total relative heights of each of the six turbines above sea level or OD.

Planning Ref. No.	Company	Turbine no's. / EIS Ref	Gr. Levels (OD)	Max. Height (OD)
11/4944	DePuy	2	DEP 1	173.5 OD
			DEP 2	178.0 OD
11/4945	Janssen Biologics	1	CEN 1	205.7 OD
11/4946	Novartis	2	NOV 1	181.5 OD
			NOV 2	175.0 OD
11/4969	GSK	1	GSK 1	157.0 OD

It can be seen from this that the highest proposed turbine is CEN 1 at 205.7 OD will be considerably above anything in the vicinity, including the surrounding hills, while the lowest of the proposed six turbines, GSK 1 will be higher than the Aghada Power Station Chimney, and also just above the level of the highest surrounding hill at 156 OD.

SENIOR PLANNER'S REPORT

Typical foundations will be reinforced concrete 18 x 18m and a 40 x 60m 'crane pad' adjacent to the foundations will also be required. Services and cabling etc are going to be put under ground.

The layout of the six proposed turbines has been predetermined by land ownership issues, as acknowledged in the EIS. As the energy being produced is primarily going to be used (*though not exclusively, it is noted in the EIS that any surplus electricity will be exported to the grid*) on site by the primary company alternatives outside the respective sites were not considered. The option of locating the turbines in a more 'regular' or 'rational order' as is recommended in the Wind Energy Guidelines, and suggested by the Council's Senior Architect at pre-application discussions, (*see Appendix B*) was not an option. The six turbines are spatially and horizontally haphazard, by reason of their siting, related to their levels and due to land ownership constraints.

The height of the proposed turbines were determined by the 'need to maximise energy yield' as stated in the EIS 2.2.3. The following table gives an indication of the scale of the proposed turbines in the context of existing onsite buildings within each respective site and is expressed as a multiple of the tallest building on each site.

Company	Multiple
Novartis	X 4.4
Janssen	X 5.7
SKB	X 6
DePuy	X 15

The range varies from the Novartis turbines which will be 4.4 times higher than the existing tallest building on site up to the De Puy turbines which will be 15 times taller than the adjacent De Puy building. Again due to the considerable difference in scale between the proposed turbines and the nearest other man-made structures, scenarios dealing with alternative heights should have been considered.

A key issue in considering such proposals as set out in the Wind Energy Guidelines is how to avoid 'the creation of visual confusion and spatial dominance' (page 37) and it is considered that this has not been achieved in the current proposal. While acknowledging landownership constraints, it is somewhat surprising that alternative turbine heights were not considered as part of the EIS.

The Manager may consider seeking further information in this regard prior to making a decision on this application. Cumulatively the proposal will be "highly visible over vast areas" because of the "size", "scale", "siting" and "layout" of the proposed turbines and will very seriously impact on the amenities of the area.

Context

All the subject sites are located in Ringaskiddy, which is on the western side of the lower part of Cork Harbour. Cork Harbour is defined succinctly in the County Development Plan 2009 as follows in paragraph 4.17.1:

'Cork Harbour is one of the finest natural harbours in the world, a unique natural environment, with a rich and diverse heritage, landscape and mix of uses. It's sheltered and deep water channels make the Harbour an ideal location for shipping and boating activities. The Harbour area is the focus for key industries such as the pharmaceutical industry and Ireland's only oil refinery at Whitegate. Much of the coast is characterised by agricultural land use or protected habitats, including internationally important mudflats of major significance for waders'

The 'uniqueness' of Cork Harbour has to be carefully considered, any proposed development that may appear to degrade it or compromise its potential needs to be considered very carefully. The Harbour has and it always will change, but the degree of change has to be within certain parameters, in this case the proper planning and sustainable development of the area. The landscape and scenic amenities of the Lower Harbour should be considered as a material asset to the region.

The Lower Harbour is in essence a bowl shaped, busy, sheltered coastal zone interspersed with low ridges which also happens to be the principle gateway to the Cork region and is of national significance. (*This is recognised by Bord Failte Ireland and in the Regional Planning Guidelines, CDP's Local Area Plans etc*)

There is a considerable population in the lower harbour. Within one kilometre of the proposed six turbines there is a population of over c. 1,200 (*see draft LAP 2010, the EIS refers to a population of 514 but that is only the population of Ringaskiddy alone and does not include Shanbally and other residential clusters nearby*). Similarly, there is an additional working population of c 7,800 (*see also the Draft LAP*) in the Ringaskiddy Strategic Employment Area or within one kilometre.

SENIOR PLANNER'S REPORT

Beyond 1 kilometre) and within two kilometres of the proposed development the population would approximately double to c 2,500 and within five kilometres it increases substantially to over 30,000 people (due to the inclusion of the towns of Carrigaline, Cobh, Monkstown and Crosshaven). Carrigaline and Cobh are amongst our largest metropolitan satellite towns with a large commuting population, while the latter two are more renowned as busy recreational destinations in the Cork region.

One of the defining characteristics of Cork Harbour is its' complexity. Cork Harbour has; *'The Port, Cork City, most of its satellite towns, many of the main roads and railways that serve them, and the largest concentrations of pharmachem and energy industries in the State are on its shores. It is a major centre for leisure boating and angling, has long, well used shoreline footpaths, and internationally important mudflats used by over-wintering wildfowl. It is surrounded by historic coastal fortifications, and is still the base for the Irish Navy' (vii)* from the recently published Draft Cork Harbour Study.

The Lower Harbour includes Napoleonic Martello Towers around the harbour, the three major nineteenth century forts of Fort Mitchell on Spike Island, Fort Carlisle on or Davis in Corkbeg, Fort Camden on Crosshavenhill and Haulbowline Military Barracks on Haulbowline Island. These have been given due recognition in the County Development Plan and are Recorded Monuments.

The town of Cobh is of national importance as it was the principle port in the country for those who emigrated during the years of the great famine and afterwards. This explains to some degree the popularity of Cobh with visiting large cruise ships (*which this year are expected to exceed on average more than one a week*).

Crosshaven is the home of the oldest yacht club in the world, The Royal Crosshaven Yacht Club (RCYC). It hosts biannually, "Cork Week" which brings yachts and their crews from around the world. Yacht races and various events are a feature of the lower harbour particularly during the summer months. Cork County Council recently completed a 'Marine Leisure Infrastructure Strategy 2010-2020' for the area. This consists of an audit of existing marine infrastructure and a ten year action plan. The development of this sector is a key priority of the Council at present.

The Council has recently acquired Spike Island which is centrally located in the middle of the Lower Harbour and near the subject sites. The Council has also recently published a brochure called 'Spike Island Historical Trail', which identifies Spike Island as a place apart. It is the intention of the Council to develop Spike Island, and Fort Mitchell on it, as a major tourist destination in the lower harbour and eventually include Fort Camden in Crosshaven as part of a historical/cultural trail. A committee has been set up to move this forward which includes inter alia, the regional director of Fáilte Ireland, the CEO of the Port of Cork, representatives from the OPW and the County Architect amongst others.

It is therefore proposed to locate the six turbines not in an isolated quiet upland area or an isolated peninsula as suggested in the Wind Energy Guidelines for large scale projects, but in the relatively small, very busy, historical, coastal, urban, industrial, recreational and residential hinterland of Cork, a hinterland that is referred to in the CDP as 'one of the finest natural harbours in the world'. This is the context in which it is proposed to locate these very large six turbines and the proposal is without precedent in this County, as all the large wind farms the Council have dealt with (c.30) to date have been in remote upland areas and I am not aware of such a proposal either nationally or internationally in a similar context.

Given the cumulative scale of the proposals it will in my view contravene Objective INF 7-4 c as the sensitivity of the receiving environment far out weighs the support for renewable energy projects in parts a and b of the same Objective INF 7-4.

Landscape / Visual impact

Within the harbours' general visual envelope, apart from a number of designated Strategic Employment Centres, like Little Island and Ringaskiddy, the harbour and the lower harbour in particular has a number of other designations in the CDP 2009. Within relative proximity to the site there are five areas of Designated Scenic Landscape, around Monkstown, adjacent to the Owenboy Estuary (Crosshaven / Currabinny), the eastern side of the entrance to the harbour from Roches Point to Whitegate, the northern and eastern part of Great Island around the town of Cobh, and the Rathcoursey peninsula south to Rostellan. Similarly there are four designated scenic routes in the Harbour area which are, the S54 Passage West to Ringaskiddy, the S58 from Carrigaline to Crosshaven, the S51 from Roches Point to Ballinacurra via Whitegate and Rathcoursey and the S53 coastal route from Belvelly Bridge to Cobh town centre.

The Cork Harbour Study has just been published in draft form, and is currently on public display. The Study been prepared in house by Nicholas Mansergh, Senior Planner. While the document is generally silent on the deployment of wind energy as a source of renewable energy in the harbour, it does raise 'the possibility' of their use on the 'plateau area east of Whitegate' (page 302).

Clearly with respect to INF 7-4, the landscape of the Lower Harbour has 'many designations', is highly 'sensitive' and has many 'protected views' and prospects'.

The applicants have submitted a landscape and visual assessment as part of the EIS which includes a zone of visual influence map or Zone of Theoretical Visual Impact, (ZTV), together with over 60 photomontages and their associated 'wireframe views'. The ZTV is based on a 1:65,000 map which, being of such a small scale, makes it difficult to identify features theoretically

SENIOR PLANNER'S REPORT

exposed to views and it is noted that the preferred scale is 1:50,000 as set out in the 2006 Guidelines (page 94). The photomontages were taken from 62 different locations or viewshed reference points (VRP) around the lower harbour, the majority from within 2km of the turbines and most of the balance from within 2km and 7km. Four were taken from north of Little Island over 10 km away.

The vast majority of the photomontages were taken using a wide angle lens with an angle of view of 73.5 degrees. This has the effect of reducing the subject being photographed; in this case, the skyline is much lower than it appears in reality. Due of the nature of the Lower Harbour with many visual reference points like the Ringaskiddy Martello Tower for example, or the main buildings in any of the applicant sites, the proposed turbines can be visually referenced against these structures. Again when viewing the turbines from any of the proposed 62 VRP's, it is considered that the existing structures adjacent to the proposed turbines were significantly larger in reality than depicted on the photomontages. Consequently, it may be concluded that the proposed turbines will be significantly larger in reality than depicted on the photomontages. This presumably is because of the use of a wide angle lens which is also not recommended in the 2006 Guidelines. The Guidelines recommend *'Panoramic photographs included to illustrate the context in which the development might be visible should be prepared by splicing photographs taken with a 50-70mm lens and not by inclusion of views taken with a wide – angle lens'* (page 96)

The most extreme example is VRP 17 from Shanbally Cross where the angle of view is 94.4 degrees, consequently the nearest turbine GEN 1 will have a much greater visual impact than depicted in the photomontage.

The applicants have included with each of the 62 VRP's a set of wireframe views, this is helpful in identifying the skyline and the relationship of each turbine to it, when viewed from within and around the Lower Harbour.

Notwithstanding the issue regarding the wide angle lens, it is nonetheless considered that the proposed cumulative impact of the proposed development would be visually obtrusive and would seriously detract from the visual amenities of the Lower Harbour area.

The cumulative visual impacts of the proposed turbines also has a serious impact on the architectural and archaeological heritage of the Harbour, see the detailed reports from the Conservation Officer and the Archaeologist. In particular, the impacts on the Martello Tower and its adjacent monument because of the proximity of DEP 2, this is acknowledged as being significant in the EIS. The cumulative visual impacts of the wider architectural / archaeological heritage of the wider harbour requires more assessment than that afforded in the EIS.

SENIOR PLANNER'S REPORT

The Manager may wish to seek professional photographic / architectural advice on this particular matter prior to making a decision. However notwithstanding the quality of the photomontages even if revised ones were submitted they would not alter the critical issue which is the scale and context of the proposals.

Currently the three most obvious structures 'breaking the skyline' around the Lower Harbour are the spire of Cobh Cathedral, the Aghada chimney and the Janssen Biologics (Ireland) building formally Centocor. When looking at the many photomontages and assessing them on the ground it becomes clear that notwithstanding the distance from which they are taken, in nearly all cases the proposed six turbines will break the skyline, and this is so whether looking from the east, north or west of the lower harbour. This is not a matter of parts of the blades peering over the skyline or horizon but in most cases the hubs (nacelle) will be visible along with a portion of the tower and all the moving blades. Given that the blades are over 100m in diameter it represents a significant amount (909 metres) of turning metal/carbon fibre over the lower harbour or a sweep area of c 8,000m² (two acres) per turbine giving a total of 48,000m² or 12 acres. The cumulative scale of these will seriously detract from the amenities of the area and be contrary to the safeguards itemised in INF 7-4.

The following section for the purposes of assessing the visual impact of the proposal is divided into three, impacts within one, two and five plus kilometres of the proposed six turbines.

1KM

Within one kilometre from the six turbines, including the designated Scenic Route S54 (from Rafeen), the village of Shanbally and Ringaskiddy, the landscape will change dramatically. It is considered that the impacts on these 1,200 residents, within such close proximity of such large turbines, will be profound. The proposed turbines will dominate the area, as is evident from the fourteen VRP's taken at, 50, 17, 15, 56, 59, 11, 12, 44, 62, 45, 16, 43, 42, and 26. While the EIS states that the impact will be significant, it is considered that profound or highly significant would be more appropriate and the cumulative visual impact of the turbines is not considered acceptable. The proposed development is contrary to the safeguards specified in INF 7-4, and contrary to ENV 2-6, 2-7, 2-9, 2-11 and 2-13 of the CDP.

2KM

Within two kilometres of the six turbines is the designated Scenic Route S58 (Carrigaline to Crosshaven, which includes a dedicated walk and cycle way), the designated Scenic Landscape esp. around Currabinny and Crosshaven including 'Drakes Pool' on the S58, is particularly vulnerable and sensitive as this ridge between the Owenboy Estuary and Currabinny has mostly been protected from intrusive development over the years. The turbines will, in my view, at the scale proposed, have a profoundly adverse impact on the scenic amenities of this area. The sensitivity and capacity of the landscape in this area is not capable of accommodating the scale of the turbines proposed. The proposed development is contrary to the safeguards specified in INF 7-4, and contrary to ENV 2-6, 2-7, 2-9, 2-11 and 2-13 of the CDP.

Spike and Haulbowline Islands, parts of Monkstown, including the designated scenic landscape area around the Golf course and the part of the designated Scenic Route S54 incorporating the coastal walk, the landscape will also change dramatically. The turbines will dominate this area as is evidenced from the following thirteen VRP's, 9, 10, 35, 38, 39, 34, 13, 50, 61, 18, 20, 19 and 55.

When entering the harbour along the shipping lane some of the turbines will appear on the horizon from outside Roches Point, see VRP 30, and after passing Camden Point they will all become clearly visible. The most significant feature when looking to the north at this point is the spire of Cobh Cathedral breaking the skyline directly over Spike Island. The turbines will considerably detract from this view, as the nearest turbine to Spike Island will exceed the apparent height of the spire by about a factor of three, see VRP 33. This together with the fact that the turbines occupy the area around Ringaskiddy where the ferryport is located, would be in the line of sight for all passengers and would, in my view, be detrimental to the amenity of harbour users. It is the Port of Cork's stated intention to move ultimately most of their activities down to Ringaskiddy, along with the existing deep water berth, which is strongly supported in the CDP 2009. The implications of the proposed turbines on the long term planning for Ringaskiddy should be kept in mind.

All the turbines will clearly dominate the western horizon when viewed from Spike Island, they will be substantially above the skyline, with the two nearest ones DEP 1 and DEP 2 practically entirely above the horizon and only about 4 km from Spike Island, see VRP 09. It is considered that the applicant has not adequately addressed the potential adverse impacts on Spike Island and its context within the Lower Harbour (see also reports of Conservation Officer and Archaeologist). The cumulative impacts of the proposed turbines will be contrary to the safeguards specified in INF 7-4 and ENV 2-6, 2-7, 2-9, 2-11 and 2-13, and ECON 6-2 of the CDP.

5KM

Beyond two kilometres from the subject sites it is considered that the visual impact will still be significant. The VRP's 31 and 32 from White Bay and Fort Davis on the eastern side of the harbour are particularly instructive. From both view-points the nacelle and all the moving parts of all the turbines will be above the skyline. This will have a detrimental effect on the scenic amenities of the harbour and dominate the landscape. Cobh has a relatively large population of c 11,000; it has a southerly aspect overlooking the lower harbour together with a developing tourism industry benefiting from its historical heritage. The proposed turbines, the nearest within two km, on the ridges directly south, will dominate most views from the town and with the revolving blades of the turbines will form a significant over bearing presence over a wide area. The visually iconic spire of Cobh Cathedral is at risk of being eclipsed given the scale and proximity of the proposed turbines.

It is difficult to assess if the proposal will adversely affect the local tourism industry, the monetary value has been calculated in the EIS, at over 122 million euros and the applicant has consulted widely with the sector. However, it is considered that the applicants have not adequately addressed the potential negative impact on the local tourism industry from the proposed development. The VRP's in question are, 05, from the grounds of the Cathedral, (again the structures especially on top of the Ringaskiddy ridge like the Centocor building appear a lot closer and larger in reality than indicated on the photomontage), 01, 02, 03, 04, and 22. The latter was taken near the top of the town in Norwood Park in Ringmeen. It shows clearly how dominant the turbines will be, as the moving parts are again all above the southerly skyline.

North of the proposed turbines lies Passage West and Monkstown. Most of the residential properties in Monkstown have a southerly aspect and they will be looking directly at the turbines. This is particularly evident especially in VRP 55 from Scotsman's Road and part of the golf course, VRP 20. This area is also a designated scenic landscape. Furthermore the views from the coastal walk will also be significantly impacted upon, a popular amenity and designated scenic route S.54, VRP's 18, 19, and 50 help illustrate the point. Even from over ten kilometres away, views from Knocknaheeny in Cork City show some of the turbine blades in their entirety breaking the skyline, see VRP 49, which indicates again the cumulative scale of the proposals in the context of the relatively low hills surrounding the harbour. This is contrary to the safeguards specified in INF 7-4, and contrary to ENV 2-6, 2-7, 2-9, 2-11 and 2-13 of the CDP.

To conclude, it is considered that the proposed turbines will seriously detract from the visual and scenic amenities of the Lower Harbour area, for an extensive distance, beyond 5 km, would be visually overbearing and would be contrary to a number of specific objectives of the County Development Plan 2009.

Residential Amenities / shadow flicker / noise)

Having regard to the Wind Energy Guidelines 2006, the main potential impacts on residential amenity from wind turbine development are shadow flicker, noise and visual impacts and these will be assessed below.

Shadow Flicker

The EIS submitted with the application included a shadow flicker assessment. The Environment Officer is looking for additional information on a number of issues, see above. These include;

- Clarification if the relative 'plinth' levels between the proposed turbines and the receptor have been taken into account.
- Identification of all residential properties within 10 rotor diameters on a scaled map.

The applicant has only identified 4 receptors, none of which are in Ringaskiddy village. Up to 50 residential properties have been identified, but not mapped, where shadow flicker will exceed

the maximum levels as set out in the Guidelines. It is considered that the number of receptors should be increased to the equivalent of at least 2 no. per turbine. Similarly, as the two scenarios modelled are based on 98 and 99 metre hub height, which have contrasting results, a hub height of 100 m should also be proofed.

The Guidelines also refer to shadow flicker impacts on 'Neighbouring Offices' (page 33). As over 7,800 people work within about 1 km of the proposed turbines the assessment should have also addressed this issue and included in the EIS.

One mitigation measure suggested to deal with shadow flicker is the pre programming of particular turbines with dates and times when shadow flicker would cause a nuisance, with a photo sensor cell used to monitor sunlight. The turbine would shut down when the strength of the sun, wind speed and angle and position of the sun combine to cause flicker nuisance. This would, in the worst case scenario, at Coolmore Cross, result in a shut down for 100 days or part thereof for one turbine i.e. NOV1. This coupled with shut down options on other turbines raises the issue of the economic viability of operating them in the first place in such close relative proximity to 'sensitive receptors'. The Council has not to date ever received an application for any wind farm proposal that apparently adversely impacts on so many residential properties, even including the working environment of so many. I am also not aware of any similar case in the country.

The recommend 500m minimum distance between turbine and residential properties referred to in the 2006 Guidelines and often quoted in the EIS comes from an era when a turbine with a height of 75 m overall was considered a large turbine. The undulating nature of the area also has to be considered, as for example the Janssen turbine CEN 1, has not only a tip height of 150m but it is will be about a further 30m OD above the level of the dwellings around Shanbally Cross to the west.

Noise

This has also been addressed by the Environment Officer who is seeking further information in particular in relation to background noise. High levels of existing background noise are an issue in parts of Ringaskiddy. This appears to be a particular problem for the GSK and Novartis turbines because of the proximity of a significant number of noise sensitive locations. Background noise levels need to be quantified separately for various times of the day taking into account wind direction. There is a discrepancy in the data in the noise impact assessment that requires clarification. Furthermore as some of the sites are regulated by the EPA in relation to matters of noise, as they have an IPPC Licence and others by the Council, the standards indicated require clarification. Similarly, the referenced noise monitoring locations should be identified and it should be demonstrated that these are representative of the nearest noise sensitive locations.

Visual amenity

This issue has largely been dealt with above. Nonetheless, the nearest dwellings to the turbines are in the case of the two proposed at De PUY 600m, the one turbine at Janssen 640m, the two Novartis turbines 600m and the one turbine at GSK 500m. The proposed turbines will dominate the landscape in the vicinity of Ringaskiddy, Shanbally and Currabinny an area with roughly 447 residential properties as well as an area with a nationally important employment base. Owing to the scale and layout of the proposed six turbines, cumulatively they will have a significant, overbearing and dominant adverse effect on the residential amenities of a large area. Of the three main towns within 5 km of the six turbines, Carrigaline, Crosshaven and Cobh, it is those properties, particularly in Cobh and Crosshaven, with direct views towards the turbines where the proposals will be most dominant. While the turbines will be visible from the elevated areas around Carrigaline especially Kilmoney, owing to the topography and aspect of the town they will not be overly dominant from Carrigaline.

The applicants have not demonstrated that the proposed development would not seriously injure the amenities of residential properties in the vicinity of the proposed structures in terms of shadow flicker, noise and visual amenity.

Archaeology / Architectural Heritage/ Impact on Special Protection Area

Archaeology

The Lower Harbour is an area rich in archaeological and heritage structures and this is acknowledged in the CDP 2009 by the number of important protected structures in the vicinity. In the context of County's archaeological heritage the monuments in the Harbour are significant and substantial. They include the Ringaskiddy Martello Tower and the adjacent monument, Fort Mitchell on Spike Island, Carlisle Fort, Haulbowline Military Barracks, Martello tower and star shaped fort, Camden Fort and the Rocky Island Magazine. All these monuments are inter visible within the Lower Harbour, which is a key feature of the Harbour and part of its archaeological heritage. It is considered that this aspect of the archaeological heritage has not been adequately assessed in the EIS especially in relation to the visual assessment carried out. Furthermore the impacts of the two De Puy turbines, DEP 1 and DEP 2 on the Ringaskiddy Martello Tower in particular and on both the setting and Monument (Fort Mitchell) on Spike Island are deemed to be contrary to the objectives in the CDP ENV 3-1, 3-2, and 3-3. While I agree with the comments of the archaeologist in relation the general impact on archaeological heritage as a result of such structures dispersed across the lower harbour I do not agree that the case has been adequately made to refuse DEP 1 solely on archaeology grounds. I agree with the comments in relation to DePuy 2, which are also supported by the Conservation Officer that DEP 2 will adversely impact on the Ringaskiddy Martello Tower. The Novartis turbine NOV 2 has also been recommended for refusal by the Archaeologist owing to its scale and size in close proximity to the nearby ringfort. As this ringfort is wholly within the lands of the applicant, is zoned industrial for a number of years and may as part of a future expansion to the Novartis complex be excavated,. I am not convinced that a refusal recommendation on archaeological grounds alone is reasonable.

Nov1

Architectural Heritage

Cork Harbour is unique in the quality of its architectural heritage. It has numerous military fortifications, together with a number of towns, Cobh, Passage West, and Monkstown which contains designated Architectural Conservation Areas. The cumulative impacts of the six turbines on this heritage has not been adequately addressed in the EIS. The impact on the Ringaskiddy Martello Tower from the proposed location of one of the De Puy turbines (DEP 2) will be very significant and contrary to objective ENV 4-1 and 4-5.

Impact on Special Protection Area

A comprehensive body of work has been carried out on behalf of the applicant dealing with this issue. It includes an Appropriate Assessment, Natura Impact Statement together with having a significant part of the EIS devoted to the subject. This included considerable consultation with the National Parks and Wildlife Service and included a Bird Radar Survey. The NPWS are generally satisfied with the proposals however the Heritage Officer is looking for additional information in relation to disturbance displacement on a number of specific species who feed adjacent to some of the proposed turbines. Likewise further information is required in relation to collision risk for a number of species that roost also adjacent to some of the proposed turbines. The further information requested relates to two of the applications only 11/4944 and 11/4945 De Puy and Janssen.

Precedent

Approximately one third of the Strategic Employment Area of Ringaskiddy remains in agricultural use, notwithstanding the fact that it remains for the most part zoned for large stand alone industrial and port related development. In terms of attracting foreign direct investment (FDI) it remains the most important strategic industrial asset in the region with its track record and the benefits accruing from 'clustering' in the pharmaceutical sector. There are also in Ringaskiddy a number of existing large pharmaceutical plants, mostly in the Pfizer Group which were not part of the current application. Some of these are currently for sale. If the turbines are permitted, as proposed, more turbines ('autoproducers' or on site producers of electricity) are likely to follow from existing 'brownfield' sites. Furthermore the possibility of locating large scale turbines here may act as a deterrent or an attraction for further FDI.

Objective SET 4-1 of the CDP mentions inter alia *'the need to safeguard these strategic industrial locations against inappropriate development that would undermine their suitability for long-term strategic use'*. The precautionary principle should apply here as the implications of getting it wrong could be so serious. As the role of Ringaskiddy evolves as a Strategic Employment Centre, it is unclear if the turbines are compatible with the vision for Ringaskiddy as a gateway location for new forms of industry aligned with research and development.

Environmental Impact Statement (EIS)

An EIS was submitted with each of the four planning applications which dealt with both the individual proposals and the collective impacts of the proposed six turbines. In general it followed a standard format, in accordance with Article 94 of the planning and Development Regulations, 2001- 2007 as amended. While the impact on Flora and Fauna in Chapter 7 was very thorough owing to the effort put into the Natura Impact Statement, Appropriate Assessment, including the Bird Radar Survey, Chapter 6 dealing with Human Beings could have been more detailed, especially as so many people live, work and recreate within close proximity. An adequate scale map showing all the residential properties would have been helpful. The effects of shadow flicker should also have been assessed for more 'sensitive receptors' including those working in the vicinity. The potential effects on aviation in Chapter 12 is also lacking detail and the Aviation Impact Assessment appears to have the incorrect specifications for turbine heights and finished floor levels. It ultimately recommends consultation with the Irish Aviation Authority (IAA) and this is taking place, but this should have happened and be concluded before the application was lodged.

Chapter 8, Landscape and Visual and the accompanying folder of A2 maps has lots of quantity, 62 to 70 photomontages but lacks precision. The accompanying 1:65,000 maps are too small and a description or methodology outlining how the photomontages were produced would have been helpful. This should include the make of the camera, focal length together with the angle of vision. The photomontages should have been taken using the recommended guidance in the 2006 Guidelines even if not for all the 70 photomontages but those from particularly sensitive locations, for example; Scotsmans Road, Monkstown Car Park, Shanbally Cross, Martello Tower, Currabinny Wood, Ringaskiddy village, Crosshaven (Camden), Drakes Pool, Spike Island, Cobh Cathedral and Fort Davis (Carlisle).

Chapter 13, Archaeology Architectural and Cultural Heritage was again extensive but lacked focus. The Conservation Officer is particularly concerned with the lack of a comprehensive assessment on architectural heritage, given the context of the proposed applications. In particular the impact on the Martello Tower as a result of the proximity of the De PUY (DEP 2) which will have a 'very significant negative impact'. Similarly the 'cumulative impacts' from all six proposed turbines, on the architectural heritage of the Lower Harbour is not adequately addressed. While the archaeology has been considered in some detail, the visual impact of the proposed development on the archaeological monuments in the area was not adequately assessed in the EIS.

On balance, however, it is my view that the EIS's are adequate and as per the aforementioned regulations. *(In the event that permission was being considered, further information would be required in relation to many aspects of the EIS's, such as in relation to noise, shadow flicker, archaeology, heritage matters).*

Impacts on Aviation

An Aviation Impact Assessment has been prepared as part of the EIS, and discussions have been taking place with the relevant authority, in this case the Irish Aviation Authority (IAA). Due

to the technical complexities involved, the IAA has written to the Planning Authority requesting further time to consider the implications of the proposal. They also expressed a wish to deal directly with the applicants as they felt it would be 'more beneficial and expeditious'. Accordingly they have requested a deferral of the decision until the end of September 2011. This is reasonable; however it is a matter for the Manager to either determine this application as per the recommendation below or to seek further information from the applicant on aviation matters among others mentioned in this report.

12. Conclusion

It is acknowledged that the four applicant companies have made an enormous economic contribution to the well being not only of Cork but of the country. Their presence in Cork and other similar and adjacent companies have become one of the defining and positive aspects of the Region. It is not only the well paid jobs mentioned in the respective EIS's but also the additional jobs and multiplier affect that benefits the entire area. Chief among these is the benefit of 'clustering' where the expertise becomes available locally and consequently the area becomes more attractive for other major FDI's. However changes are currently taking place among these major multinational pharmaceutical firms which are well outside the scope of a small economy like Ireland. Chief among these is that many of the more traditional drugs currently being manufactured are coming to the end of their respective patents. This means that they can and will be manufactured generically cheaper somewhere outside Ireland. Secondly many of the companies amalgamate or are taken over by bigger companies as happened relatively recently and independently in the case of Pfizer and Johnson and Johnson. This has resulted in the rationalisation of jobs.

If, as is claimed in the EIS, the energy bill can be reduced by up to 30% for some of the companies involved, if the proposed turbines were installed it would clearly give them a competitive advantage.

However as stated in the EIS accompanying the De Puy application '*the environment belongs to everyone*' and this has to be balanced against the apparent economic benefits. Furthermore planning decisions have to be based on proper planning and sustainable development principles and while the broader economic issues are part of this, it is not to the exclusion of everything else.

Cork Harbour is unique, as indeed is the Lower Harbour; it has a myriad of uses, including industrial and has a very large resident population. It is also exceptionally scenic and notwithstanding the industrial development it has managed to retain its attractive qualities. This is mostly because the principles of 'proper planning and sustainable development' have been adhered to over the years. It is also relatively small and contained.

The proposed six turbines due to the scale, height and haphazard layout will, in my view, dominate the Lower Harbour and be detrimental to both residents and amenity users in the

area, together with being detrimental to the architectural heritage of the area. This in the long term could be more damaging to the future of the harbour area than the relatively short term economic benefits accruing to the four companies in question. Wind energy proposals of this scale are acceptable but only in the context of large upland remote landscapes or off shore. The context of the Lower Harbour is precisely the opposite. The proposals could also set a precedent for future large scale wind energy proposals in the Harbour area.

13. Recommendation

Accordingly, having regard to the above, the refusal of this application is recommended for the reasons outlined below:

Paul Murphy,
Senior Planner,
16/06/11.

*For inspection purposes only.
Consent of copyright owner required for any other use.*

SENIOR PLANNER'S REPORT

No.	Reasons for Refusal
1	<p>Having regard to the development proposed and to the cumulative impact of the additional turbines proposed under Planning Reg. No's 11/4945, 11/4946 and 11/4969, it is considered that the resulting scale development would, by reason of the layout, siting, height and context of the turbines, create an excessive concentration of wind turbines in a spatially confined area, would be excessively visually obtrusive, would seriously detract from the visual and scenic amenities of the surrounding urban and rural landscapes of the Lower Harbour area of Cork, including areas of designated scenic landscape and views and prospects from designated scenic routes and seriously detract from the architectural / archaeological heritage of the Lower Harbour. The proposed wind energy development would, therefore, seriously injure the visual and scenic amenities of the area, seriously detract from the heritage of the Lower Harbour, materially contravene objectives of the Cork County Development Plan 2009 and would be contrary to the proper planning and sustainable development of the area.</p>
2	<p>Having regard to the development proposed, to the cumulative impact of the proposed development when taken in conjunction with the developments proposed under Planning Reg. No's 11/4945, 11/4946 and 11/4969 and to the proximity of the proposed turbines to a number of residential properties and settlements in the vicinity, it is considered that the proposed development, would significantly and adversely impact upon the residential amenities of a number of houses in the vicinity by reason of visual intrusion, noise and shadow flicker. The proposed development would, therefore, seriously injure the existing residential amenities of the area, would be contrary to the provisions of The Wind Energy Guidelines for Planning Authorities issued by the Department of the Environment, Heritage and Local Government 2006 and be contrary to the proper planning and sustainable development of the area.</p>

Appendix A

Declan Daly,
Assistant County Manager



24/07

Re: De Puy Wind Turbine Proposal

Following earlier discussions, I have:

- (a) visited some photomontage sites to get a clearer view of likely impacts
- (b) contacted the CER in relation to regulation of transmission
- (c) contacted the Heritage Officer regarding the adjoining SPA and pNHA

and looked at the wider implications of the proposal for

- (d) wind energy in Cork
- (e) Ringaskiddy
- (f) Cork Harbour

A. Photomontages: I visited site nos 2-4, 7 from which the photomontages were taken, to gain a sense of the likely scale, and compared my own impressions with those on p.19-21 of the Draft Environmental Screening Study submitted, as follows:

(2) (From Monkstown) The montage is not of usable quality, but knowing the height of the turbine relative to the hill, some assessment is possible. The Screening Study comment "the proposed turbine appears much larger in scale than the existing pylons and other structures," appears correct.

(3) (From White Point) This montage is of reasonable quality. The Study's comment "Although the landscape in this viewshed has an industrial character, the wind turbine is the only structure rising far above the existing skyline, and dominates the vertical axis of viewshed" is accurate

(4) (From road S. of Cobh Cathedral). Similar comments to (3) apply. The E. turbine would be more prominent from this angle, because almost its full height is visible from the N, because screening by higher ground from that angle is minimal. More of the foot of the turbine would be concealed on the W. site

(7) (From Curraghbinny). Comparison of the montage with viewing by eye from this site suggests a tendency for the lens used to flatten vertical features. On the ground, one is more conscious of the exceptional height of the spire of Cobh Cathedral, and the height of the turbines might similarly have greater impact. The De Puy building is low and dug in, and would emphasise the height of the E. turbine, whereas the Pfizer building is one of the largest and highest in Ringaskiddy, and the W. turbine is less out of scale with it. The Study considers both turbines fit appropriately into this industrial landscape, though significantly exceeding the skyline, but the W. one as having the more favourable impact.

SENIOR PLANNER'S REPORT

The provisional ZVI map (Figure 3.1) is of limited value. It is however clear that the turbine(s) would become the dominant feature in the lower Harbour area, would be prominent from 4 scenic routes, and would be viewed by an urban population which would be much larger than normal with windfarms.

B. The CER/Regulation of Transmission: In earlier discussions, I raised the question of whether De Puy could generate in a more suitable off-site location. The CER advised that this is not an option. In contrast to electricity generation, transmission of electricity is subject to a complete monopoly. This is in line with EU as well as Irish policy, and there is no provision in the legislation for exceptions or derogations, except in relation to transmission within a block of private property. The underlying logic is that the economics of transmission varies widely, presumably because it is cheaper to transmit to large, densely developed urban areas with large users, than to sparsely populated rural areas with small ones. At the same time, transmission charges are standardised. If private transmission were permitted, cherry-picking would result, as transmission of large volumes over short distances could be done below the standard price by the private sector, and the public system would be left with the more expensive transmission functions, which would raise the transmission cost per unit.

The prohibition on private transmission is regarded as being breached, if wires are run over or under a public road, or across the foreshore. Offsite generation for private use is therefore not practicable. On the other hand, there is a recognised category of businesses who generate power onsite for their own use: they are described as "autoproducers".

There appear to be 2 motives for the De Puy project:

- (a) reduced exposure to international energy and Irish electricity generation prices
- (b) avoidance of transmission costs on "autoproduced" electricity.

There is a distinction between them. While (a) is a potential source of collective competitive advantage, improved energy security and reduced greenhouse emissions, the advantages of (b) to the firms involved may be offset by higher unit transmission costs for other users, especially if they are in large easily served urban areas where the cost of transmission via the grid may be well below the price.

(C) Heritage Designations: Lough Beg is designated as both an SPA and pNHA, because of its importance as a winter feeding site for shore birds. Part of the area around Smith Kline Beecham is also a wildfowl sanctuary. The development around Lough Beg has apparently not had a major impact on bird numbers to date, and this is expected to remain the case so long as the mudflats and open fields remain.

The Heritage Officer has advised that the most important issue would be how the turbine sites related to flight paths, and it would require survey work (in winter) to establish where they were.

in daves decision?

(D) Wider implications for Wind Energy in Co. Cork.

The proposal would involve bringing full size wind turbines into lowland, semi-urban areas, where they are likely to raise new issues, and create a precedent which may result in those issues arising in other places as well. Implications include:

- (a) in general, wind energy proposals up until now have been made in lightly populated upland areas. Relatively few people are affected, and there is a better chance that turbines will be in scale with the landscape. Wind turbine proposals in lowland, semi-urbanised areas will affect much larger numbers, and be more obviously out of scale with buildings. On the positive side, ambient noise levels are generally higher in lowland, semi-urban areas, so noise from turbines may be less of a problem.
- (b) Large blocks of land which do not have houses within 4-500m are much less likely to be available in this type of area, making it likely that most projects will be for 1 or 2 turbines
- (c) The consequence of (a) and (b) is that such proposals are likely to be disproportionately contentious, relative to the wind energy they would generate if permitted

Adopting an explicit CDP policy of only considering such turbines for major employers on large sites with autoproducer status would limit the precedent to some extent, but (a), (b) and (c) would still apply.

E. Wider implications for Ringaskiddy

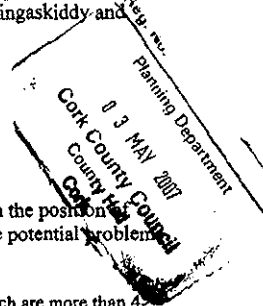
One could restrict the precedent further, by limiting it to a designated area(s) within the County, on the basis that a single turbine serving a single business is likely to have a more unfavourable impact to benefit ratio, than several ones grouped close together. Three turbines serving 3 large industries are not going to have treble the impact of one turbine, but they may have treble the benefits. Ringaskiddy is a good place to explore the implications of this line of thought, as it has a number of pharmachem plants on large sites, and has prima facie potential.

The 5 plants in Ringaskiddy which might be considered to have potential on the basis of site size and distance/visual separation from the villages of Ringaskiddy and Shanbally are:

- (1) Novartis
- (2) Glaxo Smith Kline Beecham
- (3) Pfizer (Lough Beg)
- (4) De Puy
- (5) Centocor.

I have mapped these on a base with geodirectory information on the position of residences (so that separation distances can be allowed for). The potential problems which emerge are:

- (a) *proximity to plant buildings:* the parts of sites (2) and (4) which are more than 4-500m from residential properties are quite densely built up, raising the possibility that the turbines would affect employees, or that buildings would interfere with windtake.



SENIOR PLANNER'S REPORT

- (b) *Proximity to other large plants:* all 5 sites are close to at least one other such site. The 2006 Wind Energy Guidelines suggest minimum separation distances between turbines of 3 x diameter (crosswind) and 7 x diameter (downwind). For the 80m rotor diameter envisaged in the De Puy proposal, this represents 240m crosswind and 560m downwind. A turbine on the W half of the De Puy site would be deprived of wind by one on the N side of the Pfizer (Lough Beg) site, as would one on the SE part of the Centocor site be by one on the E part of the Novartis site incompatible with one on, and one on the SW part of the Pfizer site by one on the NE part of the Smith Kline Beecham one.
- (c) *Roads:* The new N28 will run through the S part of the Centocor site, sterilising lower ground open to the S but screened by the hill from the N which might otherwise be suitable. A safety set back of 110m for a national road is recommended by the Guidelines (s.5.8) and this would render some 40 acres of the Centocor site unavailable.
- (d) *TV reception:* The numbers affected by these problems in upland areas close to windfarms are very small, and can be remedied on an individual basis, whereas this would not be so in relation to turbines in Ringaskiddy. Construction of the Centocor plant (roof top c.70m OD) has already affected reception in parts of Monkstown, and turbine tips almost twice that height would presumably have a more extensive effect.
- (e) *Local receptiveness to industry:* A perception that large new pharmaceutical plants were likely to want to instal a wind turbine at a later date could well make the planning process more difficult for them. They work to tight timetables, and would regard a likelihood of appeals or litigation as a serious deterrent.

F. Wider implications for Cork Harbour

The 2003 CDP referred back to the chapter of the 1996 CDP on Cork Harbour, and suggested that it should be managed in accordance with a future CZM study based primarily on that chapter, which emphasised the mixture of industrial, residential, and undeveloped agricultural and forestry areas adjoining the Harbour, and the need to maintain a balance between them. The latter element is obviously subject to erosion, but has an important role in ensuring that the Harbour remains attractive to its established residential communities, is a suitable tourism entry point to the country, and does not become so developed and industrialised. Wind turbines will be a dominant man made feature, which will use up quite a lot of the Harbour's environmental capacity, and erode the sense that development, while extensive, is occurring in a natural context of water and greenery.

Conclusions:

There would be a prima facie case for refusal of an application for a full size turbine in this location, based on its out of scale nature (not seriously disputed in the commentary on the montages submitted and quoted in (A)), and its impacts on the scenic routes referred to in (A), and on the Lower Harbour area generally as per (F).

I accept that the De Puy proposal is an interesting one, and one which, at least in theory, could improve our chances of retaining established large site/pharmachem type industries on Cork Harbour, and persuading their head offices to reinvest.

SENIOR PLANNER'S REPORT

A weakness in any application would be that it would be in a location where a normal wind turbine producing power for the grid would be unlikely to get permission. The constraints which apply even to large industrial sites in semi-urbanised areas could generate a lot of complications, as per (D) and (E).

I would expect any application, successful or otherwise, to be very controversial, and disproportionately damaging to prospects for consensus in relation to both wind energy and for pharma chem type industry in Cork. The amount of wind energy which would be generated would be very minor in comparison with conventional upland windfarms. Even established pharma chem. industries generate frequent subsequent applications, which are normally completely uncontroversial, but could change.

The economic case is not clear enough or strong enough to justify disregarding the physical case against, or sufficient to base a CDP policy on. Isolated applications unrelated to a CDP policies would maximise the amount of controversy, relative to the turbines actually permitted, or the power actually generated.

Assuming that De Puy were disposed to appeal if refused by the Council, an application would in practice be determined by An Bord Pleanála, as there would almost certainly be 3rd party appeals in the event of a permission.

Policy Implications

Cork (and Ireland in general) has a significant number of industries on large sites in more rural areas, where the same constraints may not apply to energy autoproducers. I would see this as being a much more promising option, with fewer risks and less departure from established policy. I know of one such plant which is interested.

While the effect of a policy of being more positive to large rural autoproducers than to semi-urban ones might be to make inward investment more inclined to seek rural sites, this would not necessarily be a bad thing. Since the mid-1990s, because of the type of industrial/international service sub-sectors which have been growing internationally, the balance of IDA type investment has been heavily tilted towards large urban areas. Some source of competitive advantage specific to more rural areas might help redress the balance, particularly if based on quite valid distinctions on the type of area in which very large structures are suitable. While many such industries are simply not suitable except in places where they have infrastructure of a standard only available in a few places, this is not always the case, and one of the reasons for city locations (the need for a deep local labour market with specialist skills), has to some extent been reduced by the dispersal of population over the last decade.

There is a more general case for trying to use the growing interest in renewable energy as a base for rural employment and economic development, to compensate for inevitable job losses in the established extractive industries such as agriculture, and to look for ways in which this potential can be realised in a reasonably employment intensive ways. This more general case should be a theme in the forthcoming Council

SENIOR PLANNER'S REPORT

Recommendation: We should advise De Puy that we would see their proposal as being an interesting one, but as being out of scale for its location and likely to be an overdominant feature in the Lower Harbour area, and that it would not be appropriate for us to encourage them to make an application, as there would be a quite strong possibility of refusal. However, they would be fully entitled to apply, and regardless of the Council's position, the final decision on any application would probably be made by An Bord Pleanála.

N.B.K. Mansergh,
Senior Planner,
1/5/07

*For inspection purposes only.
Consent of copyright owner required for any other use.*

SENIOR PLANNER'S REPORT

*For inspection purposes only.
Consent of copyright owner required for any other use.*

Appendix B

PrePlanning Meeting Notes

RE: Lower Harbour Energy Group

Date: August 10th 2010

Attendees: Mr. Dan Garvey (ARUP)
Mr. Dave Bassonett (BSM)
Ms. Ronnie Barry, EP, CCC
Mr. Noel Sheridan SEP, CCC

Purpose of meeting to present to CCC photomontages from various viewpoints of 9 proposed turbines. It is the end of the feasibility stage of the project and the clients are to decide on how to proceed. DG & DB were presenting photomontages in order to keep the PA informed on progress. The images were not given to the PA for consideration as the client group have not decided on how to proceed. DG will come back to the PA for more detailed per-planning input in the future.

PrePlanning Meeting Notes

RE: Lower Harbour Energy Group

Date: December 10th 2010

Attendees: Mr. John O Mahoney (ARUP),
Mr. Dan Garvey (Arups)
Mr. Dave Bassonett (BSM)
Ms. Ronnie Barry, EP, CCC
Mr. Paul Murphy, SP, CCC
Mr. Noel Sheridan SEP, CCC

No drawings or details presented in advance of meeting.

Consultants had held public round of meetings & 2nd round to be held next week.

Now 6 turbines proposed at 4 locations.

Turbine ht of 100m with rotor of 45m.

All will be 500m+ away from houses.

Series of photomontage images presented.

Intention is to lodge in January.

CCC requested that time be given for our input. To be given detailed proposals on visual impact, residential impacts and ecology for feedback from CCC.

Noted that consultations are without prejudice to how the application will be assessed.

SENIOR PLANNER'S REPORT

*For inspection purposes only.
Consent of copyright owner required for any other use.*

PrePlanning Meeting Notes

RE: Lower Harbour Energy Group

Date: January 28th 2011

Attendees: Mr. John O Mahoney (ARUP),
Mr. Dan Garvey (Arups)
Mr. Dave Bassonett (BSM)
Mr. Harry Walsh (McCutcheon Mulcahy)
Ms. Ronnie Barry, EP, CCC
Mr. Paul Murphy, SP, CCC
Mr. Noel Sheridan SEP, CCC

An information pack had been sent to CCC in advance of meeting. It included:

- Draft Non-technical summary
- Enhanced photomontages
- Shadow flicker details
- Noise details

Proposed new turbine model would be 99m to hub plus 50.5m blade.

Intend to apply by Feb 18th

Issues discussed:

Aviation

IAA had raised concerns about the impact on the radar installation at the airport. Consultants are liaising with IAA.

SENIOR PLANNER'S REPORT

Ecology

Radar survey has been done on night flights of birds. Liaising with NPWS

Residential Amenity

Full details on background noise would be need in the EIS

Shadow Flicker

Deeper analysis required quantifying the number of houses affected.

Landscape Issues

4-5 residential clusters in the area would be adversely affected by visual impact

PM expressed concern that some images are under-estimating the impact, by reference to existing structures. Is this due to use of wide-angle lens?

DB: 50mm lens, not wide angle is used for the most part. In some images (4-5) wide angle is used. Method used is best international practice.

PM: use of wireframes suggested, as scale is a major problem

Architects Dept have examined the photomontages & they state that it is unacceptable. There is a random distribution of turbines without any coherent form or pattern.

PM: Cannot see a planner recommending for this. CCC management is aware of this concern.

PM: Conflict with harbour's amenity value. This is not simply a purely industrial / brownfield location. It is a mixed use harbour with an important amenity character.

A smaller turbine model is unlikely to address the problem.

PrePlanning Meeting Notes

RE: Lower Harbour Energy Group

Date: Friday 11th February 2011, 2.30 p.m.

Attendees: Mr. John O Mahony, ARUP
Mr. Dan Garvey, ARUP
Mr. Harry Walsh, McCutcheon Mulcahy,
Mr Paul Murphy, Senior Planner CCC
Mr. Noel Sheridan, Senior Executive Planner CCC
Ms. Ronnie Barry, Executive Planner CCC

SHADOW FLICKER: Large resolution of shadow flicker map presented and accompanied by narrative. Identified that impact would typically be early morning. No dwellings within 500 m constraint. In the order of 50 properties might exceed 30 hours per annum, worst case scenario. Those impacted on would be impacted during the hours of 5.30 a.m. to 6.30 a.m. and 7.00 a.m. to 7.30 a.m., with early morning impacts.

PHOTOMONTAGES: Wireframe for cumulative impacts for all turbines. Will be clarifying photomontages in application documents. Colour selection will also be clarified – worst case presented. Enhanced turbines presented in application documents and will be outlining methodologies in the application with respect to photomontages. The Planning Authority indicated that the use of wireframe was helpful.

NPWS: ARUP indicated that they had a meeting with the National Parks and Wildlife Service (NPWS) 10/02/11. The surveys were picking up data for 12 months and radar surveys.

Interim report from FIRA, would be incorporated into the EIS's and AA's.

Interpreting FIRA report work to be done.

SENIOR PLANNER'S REPORT

The NPWS want clarity; they are acknowledging data collected and want integration of the data with FIRA (visual data) and radar data. NPWS have indicated that they are favourably disposed to the information presented. Indicated that surveys would continue until the end of March. The reports on birds are comprehensive and can be lodged if required.

IRISH AVIATION AUTHORITY: Report has gone to Radar Impact Team.

Also indicated that ARUP have sent out consultation letters. RTE don't envisage problems.

With respect to the potential for impact of turbines on television signals, this will be covered in the EIS.

Towards the end of the meeting, the Senior Planner Mr. Paul Murphy, re-iterated concerns regarding the proposed development, particularly with respect to the visual impact of the proposed turbines cumulative impact on the Lower Harbour area.

For inspection purposes only.
Consent of copyright owner required for any other use.

SENIOR PLANNER'S REPORT

*For inspection purposes only.
Consent of copyright owner required for any other use.*

Appendix C

SENIOR PLANNER'S REPORT

Paul Murphy

From: Sean McLoughlin
Sent: 07 June 2011 12:22
To: Paul Murphy
Subject: FW: Harbour Turbines

From: Sean McLoughlin
Sent: 27 January 2011 14:54
To: Paul Murphy
Subject: Harbour Turbines

Hi Paul, I have copied some of my report for the Indaver submission and doctored it to be specific for the pre-Planning report for the wind turbines as below. I have done this because the issues are very similar.

I must state at the outset that the photo montages that have been presented have been taken with a wide angle lens which diminishes the impact of the scale of the turbines. This too was the case with the Indaver submission

Context:

The sites for the proposed wind turbines are located adjacent to existing pharmaceutical factories, seemingly at random, on the entire Ringaskiddy peninsula. Due to their immense scale and random positioning on high ground, the proposed turbines will be visible from the entire Harbour area, the surrounding high ground and beyond. Their scale alone will visually dominate the landscape from both the water, particularly from boats entering the port, and from populated and historic areas such as Cobh and Monkstown. This without the kinetic movement that dominates the visual aspect of wind turbines.

Scale:

There is no denying that the enormous height of the wind turbines will dwarf any neighbouring structure on the Ringaskiddy Peninsula and will compete with the smoke stack of the Aghada Power station and the industrial refinery buildings at Whitegate in the entire harbour area. They will also obviously compete with the church Spire at Cobh which is the quintessential image of Ireland when one enters Cork harbour by boat. These turbines are each higher than all the above structures.

The oil refinery and particularly the power station at Aghada are already a blot on the landscape and the flue from the workings of the power station can be observed from virtually the entire harbour area due to its height. It is relatively well removed from the historic Cobh area and Monkstown for it to recede somewhat in the distance but it still creates a huge element of focus on arrival in the harbour.

Consideration:

Cork harbour is a **national asset**. Photomontages indicate that the Turbines will have a visual impact from virtually the entire harbour area and particularly from entering the harbour and from Cobh (cathedral) and Monkstown and adjacent areas. The absolute scale of this impact and the fact that it breaks the skyline in all instances and in at least one instance is completely on the skyline will be hugely negative. Although the site might not specifically have scenic amenity designation in the Cork County Development Plan, 2003 or the Draft County development Plan

SENIOR PLANNER'S REPORT

2007, the fact that the site is on the waters edge of the harbour which is generally a scenic amenity and is so prominent visually from all angles, it should be considered as having, by default, scenic amenity designation.

Having regard to the above I consider that the scale of the proposed turbines is out of proportion relative to its sensitive position. I consider too, that by allowing any turbines of such immense scale will set a precedent for any large scale structure in future Planning applications.

Alternatives:

In order for this project to be fairly and rationally assessed photomontages with a narrower angle of vision are required, particularly from water level in the channel and showing the relative height to existing structures directly. I am also of the opinion that as a wide angle photograph taken from a distance will show the impact as being minimised two photographs need to be taken from a vantage point, one at a wide angle and one focused more closely on each turbine site. That is how an individual will scan the horizon and focus in on an element.

Wind Turbines generating power that connect to the grid can be placed at any location including that designated for power at the Aghada side of the harbour where the power station already exists. There is already a precedent for tall industrial structures in that locality.

Grouped Wind turbines should follow a pattern of development that can be understood by the observer and should not be placed randomly as in this proposal.

Recommendation:

I recommend that Turbines are not allowed on the Ringaskiddy Peninsula due to the historic and Amenity value of the Cork Harbour and its environs.

For inspection purposes only
Consent of copyright owner required for any other use.

SENIOR PLANNER'S REPORT

*For inspection purposes only.
Consent of copyright owner required for any other use.*

Appendix D

SENIOR PLANNER'S REPORT

Photographs Taken on Site Inspections 27/05/11

with respect to pending applications

11/4944, 11/4945, 11/4946 and 11/4969



Site notice 11/4944



SENIOR PLANNER'S REPORT

Site notice 11/4945



Site notice 11/4946



Site notice 11/4969

SENIOR PLANNER'S REPORT



Proposed site of the proposed turbine DEP 1, crane stoned area on De Puy site. Turbine to be located in area of overgrowth and existing trees



*Proposed site of DEP 2, crane stoned area and associated access road on De Puy site.
Turbine to be located close to northern site boundary, close to area of overgrowth and trees*

SENIOR PLANNER'S REPORT



Proposed location of turbine on Janssen Biologics site, CEN 1



Extent of views over the Harbour area from Janssen Biologics site

SENIOR PLANNER'S REPORT



Extent of views over the rural landscape to the south from Janssen Biologics site



Proposed location of turbine NOV 1 on Novartis site

SENIOR PLANNER'S REPORT



Proposed location of turbine NOV 2 on Novartis site, within subject field



Extent of views over the Harbour area from Novartis site

SENIOR PLANNER'S REPORT



Turbine at GlaxoSmithKline site GSK 1 to be located within existing complex of structures and is to be located to the right of lamp standard in photograph, within the built up area of existing site



Existing ribbon of dwellings to the south of GSK site, photograph taken at shoreline close to proposed turbine

SENIOR PLANNER'S REPORT



Photograph taken on entrance road to GSK – proposed turbines at Novartis and Janssen will be clearly visible in the landscape. Janssen building clearly evident at right side of photograph

*For inspection purposes only.
Consent of copyright owner required for any other use.*

Please see the reports from ACM dated 21st and 22nd June 2011. In this case the Manager has directed that this application be deferred for further information, as per the report of 21/06/11. The matters of further information are required are outlined in the ACM's report dated 21/06/11.

Please ensure that the additional matter with respect to the roads issue identified by the NRA's submission, as identified in the report of the ACM dated 22/06/11, is incorporated into the further information request. It is noted that 10 items of further information are required.

11/4945 Janssen F. I. Response

In my previous report on this file, (together with those on 11/4944, 11/4946 and 11/4969) I recommended refusal of permission, in this case for two reasons, these included matters relating to the layout, siting, height and context of the proposed turbine, in conjunction with the other pending turbines, on the visual and scenic amenities of the lower harbour, on the residential amenities of people living in the harbour, including the architectural heritage of the wider harbour. The Assistant County Manager felt that the Planning Authority should seek further information on a number of key concerns and a request for further information was sought in June 2011. The applicants have now replied formally to the issues raised in the request for further information.

Having read all the internal reports prepared in response to the further information submitted, the issues relating to; aviation, roads, noise and bird life appear to have been resolved, subject to the inclusion of appropriate conditions. However, issues relating to visual amenity, heritage and shadow flicker have not been, in my view, resolved, see relevant reports on file.

Visual Impact

The applicant has explained and demonstrated in some detail the difference in the quality of photomontages, depending on the method used to assemble them. Additionally the applicant has submitted the requested number of revised photomontages, prepared as per the 2006 Wind Energy Guidelines, together with additional views that were requested. These revised views are, in my opinion, somewhat clearer than the originals, when viewed as suggested side by side with the originals, however they only cover about half the field of vision viewable to someone looking from the same vantage point. What they gain in clarity they lose in range. As is stated in the response, 'irrespective of the method, the result is not the same as the human eye'.

Furthermore no photomontage can capture the impact of movement, which kinetic movement dominates the visual aspect of wind turbines. Moving turbine blades attract the human eye towards them. As demonstrated in the case of the earlier montages submitted, all this 'movement' will be taking place above the skyline or the horizon when viewed from within and around the harbour.

Having read the information submitted and examined the revised photomontages, I remain of the view that the subject proposal, in conjunction with the 3 no. other current pending applications, will have a detrimental impact on the visual amenities of the lower harbour, owing to their size, scale, layout and context.

Heritage

The further information response focuses on 'visual obstruction' as against visual dominance or visual impact. The cumulative impacts on the wider archaeological, architectural, and cultural heritage of the

lower harbour area and its historical setting is considered a major obstacle. The County Archaeologist and Conservation Officer have re-stated their respective opinions and that this application should be refused accordingly.

Shadow Flicker

The fundamental issue here is that the 2006 Wind Energy Guidelines suggest that it is only 'offices and dwellings within 500m' that should be considered as critical and 'at distances greater than 10x rotor diameter the potential impact is very low', i.e. 1000m. The Guidelines also sets limits of 30 hours/year or 30 minutes/day. My concern is that when these Guidelines were published in 2006, a 75m turbine was regarded as being 'large'. The larger the turbine the longer the shadow. The 'receptors' identified have limits exceeding the recommended limits, notwithstanding the fact that they are all outside 500m radius of the respective turbines. Furthermore the 'receptors' identified represent a number of residential properties just south of Shanbally Cross in the case of Janssen alone. Similarly, a large number of people work in the Pfizer and adjoining industrial plants to the north of the proposed turbine, where shadow flicker could cause an issue. I remain of the view that shadow flicker will be detrimental to the amenities of people both living and working in the lower harbour area.

Noise

This issue has been resolved to the satisfaction of our Environment Department and appropriate conditions have been suggested for inclusion, in the event of permission. Noise should not form part of refusal reason no. two identified in my earlier report.

Conclusion

Cork Harbour is as stated in the County Development Plan 2009 '*one of the finest natural harbours in the world, a unique natural environment, with a rich and diverse heritage, landscape and mix of uses.*' The CDP 2009 and the Carrigaline Area Electoral Area Local Area Plan 2011 strive from a land use and planning view point, to balance all these competing demands. Therefore, while there are many objectives encouraging further development especially industry and residential development, there are also many objectives protecting the scenic amenity, recreational potential and historic character of the harbour. The lower harbour in particular has more of a concentration of these competing uses than the upper or inner harbour area. Within one kilometre of the six proposed turbines, on the 4 no. individual sites, there are about 7,800 workers and 1,200 people, and this figure roughly doubles within two kilometres from the turbines. The proposed turbines are at 150.5 metres tip height, are very very large and the only object of a similar height in the wider harbour is the Aghada power station chimney at 152m. However, the Aghada power station chimney is at sea level, (the turbines vary from 6.5m OD to 55.2 OD) and does not rotate in the wind. Not only will the turbines be excessively visually obtrusive, in my view, but given their scale, they will impact adversely on the residential amenities on some of the 1,200 people living within 1km of them, by virtue of visual obtrusiveness and shadow flicker. As outlined in my earlier report, a wind energy proposal of this scale and magnitude is more appropriate in a remote upland area or out to sea and not in a very busy partly industrialised and partly urbanised 'unique' harbour. Notwithstanding, the further information submitted, I remain of the view that this

SENIOR PLANNER'S REPORT

application should be refused for the two reasons stated on my report of 16/06/11 and recommend refusal accordingly, but excluding the noise reference in reason no. two.

Paul Murphy,
Senior Planner

*For inspection purposes only.
Consent of copyright owner required for any other use.*

SENIOR PLANNER'S REPORT

Following the decision of the ACM as per report of 15/2/2012 the following conditions are to be attached.

Conclusion

Grant Application

Conditions/Reasons

No.	Condition	Reason
1	The proposed development shall be carried out in accordance with the plans and particulars lodged with the Planning Authority 29/04/11 and as amended on 16/05/11 and 21/12/11, save where amended by the conditions herein.	In the interests of clarity.
2	The period during which the development hereby permitted may be carried out shall be 10 years from the date of this order.	Having regard to the nature of the proposed development, the Planning Authority considered it appropriate to specify a period of validity of this permission in excess of five years.
3	The developer shall ensure that all construction methods and environmental mitigation measures set out in the Environmental Impact Statement and associated documentation are implemented in full, save as may be required by conditions set out below.	In the interest of protection of the environment.
4	The date of commissioning of the turbine permitted herein shall be notified to, and established in writing with the Planning Authority before any use of the development is brought about. This permission has been for a period of 25 years from the date of commissioning of the turbine. The turbine and related ancillary structures / equipment shall be removed at the end of this period of 25 years unless, prior to the end of the period, planning	To enable the Planning Authority to review their operation in the light of circumstance then prevailing.

SENIOR PLANNER'S REPORT

	permission shall have been granted for their retention for a further period.	
5	<p>a) The wind turbine including masts and blades, shall be finished externally in a light grey colour.</p> <p>(b) Cables within the site shall be laid underground.</p> <p>(c) The wind turbine shall be geared to ensure that the blades rotate in the same direction.</p> <p>(d) Transformers associated with the turbine and mast shall be located either within the turbine mast structure, or shall be located under ground, beside the mast.</p>	In the interest of visual amenity.
6	The wind turbine shall be operated and maintained to the satisfaction of the Planning Authority and before development commences, written evidence of a maintenance contract to ensure the continuous operation of the turbine shall be submitted and agreed with the Planning Authority.	To prevent the flooding of the public road.
7	Excavated banks and bases around the turbine shall be re-laid with overlying turf removed during construction.	In the interests of visual amenity.
8	Wind speed data recorded on site shall be made available to the Planning Authority on an annual basis.	In the interests of orderly development.
9	Prior to construction commencing, the applicant shall agree with the Planning Authority a shadow flicker monitoring programme to determine actual flicker effects at agreed locations following commissioning of the turbine, and shall implement an agreed programme to mitigate the impact on these receptors, and any other impacted receptors following a review of the monitoring programme. The developer shall comply with any mitigation measures deemed necessary by the Planning Authority, including the intermittent switching off of the turbine, as a result	To safeguard the amenities of the area and in the interests of residential amenity.

SENIOR PLANNER'S REPORT

	of the monitoring.	
10	The applicant shall publish and maintain a contact name and number, and a register for the reception and logging of any complaints/ queries relating to the operation of the permitted turbine. Updated details of the name and contact shall be made available at all times to the Planning Authority. This register shall be made available for inspection by the Planning Authority on request. This register shall be reviewed periodically by the applicant and submitted to the Planning Authority on request. The applicant shall implement any mitigation measures as required by the Planning Authority following review of this register.	To safeguard the amenities of the area.
11	Dust minimisation and control measures shall be implanted as per submitted EIS during the period of construction. A vehicle wheel wash shall be provided at the entrance to the construction site. No dust or mud shall be carried onto the public road. All operations on site shall be carried out in such a manner as to ensure that no odour or dust nuisance occurs beyond the site boundary because of such operations.	To safeguard the amenities of the area.
12	Monitoring of the construction phase shall be carried out by a suitably qualified competent person to ensure that all environmental mitigation measures contained in the documentation which accompanied the application are fully implemented. A designated member of the company's staff shall interface with the Planning Authority or member of the public in the event of complaints or queries in relation to environmental emissions. Details of the name and contact details and the relationship to the operator of this person shall be available at all times to the Planning Authority on request whether requested in writing or by a member of staff of the Planning	To safeguard the amenities of the area.

SENIOR PLANNER'S REPORT

	Authority at the site.	
13	On full or partial decommissioning of the turbine permitted herein, or if the wind turbine ceases operation for a period of more than one year, the turbine and all decommissioned structures shall be removed, and foundations covered with soil to facilitate re-vegetation, all to be complete to the written satisfaction of the Planning Authority within three months of decommissioning or cessation of operation.	To ensure satisfactory reinstatement of the site upon full or partial cessation of the project.
14	In the event that the proposed development causes interference with telecommunications signals, effective measures shall be introduced to minimise interference with telecommunications signals in the area. Details of these measures, which shall be at the developer's expense, shall be submitted to, and agreed in writing with, the Planning Authority prior to commissioning of the turbines and following consultation with the relevant authorities.	In the interest of protecting telecommunications signals and of residential amenity.
15	Prior to commencement of development, a transport management plan for the construction stage shall be submitted to, and agreed in writing with, the Planning Authority. The traffic management plan shall incorporate details of the road network to be used by construction traffic, including over-sized loads, and detailed arrangements for the protection of bridges, culverts or other structures to be traversed, as may be required.	In the interest of traffic safety.
16	The construction of the development shall be managed in accordance with a Construction Management Plan, which shall be submitted to, and agreed in writing with, the Planning Authority prior to the commencement of development. This plan shall provide details of intended construction practice for the development, including hours of working, noise management	In the interest of public safety, residential amenity, and the protection of habitats.

SENIOR PLANNER'S REPORT

	measures, the protection of watercourses and the off-site disposal of construction/demolition waste.	
17	Monitoring for bird casualties will be carried out under selected turbines in this application and other turbines in the Lower Cork Harbour area, after commencement of operation. The turbine locations, area and method of search, and the timing and duration of monitoring, will be agreed with the Planning Authority after consultation with the National Parks and Wildlife Service, prior to commencement of operation.	To monitor the effects of turbines on birds near a Special Protection Area.
18	Only synchronously flashing lights will be used to light the turbines. Nacelle covers will be designed to be as perch-proof as technically feasible.	To reduce the potential mortality of birds near a Special Protection Area.
19	Monitoring of use of the fields by curlew, black-headed gulls and black-backed gulls, adjacent to the turbine, will be carried out between September and March in the first two years of operation of the turbine, by a competent experienced ornithologist. Where this monitoring, even if incomplete and taking into account any mortality results of the bird casualty monitoring, indicates that curlew have a high risk of collision, then appropriate measures will be taken by way of land use management agreements to reduce the foraging value of land close to the turbine, while enhancing it at a safe distance from the turbine, taking into account likely dispersal routes to and from the turbine.	To monitor the effects of turbines on birds near a Special Protection Area.
20	No cabling should encroach onto the proposed N28 preferred route corridor.	In the interests of orderly development and road safety.
21	Upon termination of the use of the wind turbine permitted herein, the turbine shall be dismantled, and all above ground elements removed from the site, and the site shall be restored to its existing condition in consultation with the Planning Authority.	In the interest of orderly development and visual amenity and to ensure satisfactory reinstatement of the site.

SENIOR PLANNER'S REPORT

	<p>Prior to commencement of development, the developer shall lodge with the Planning Authority a cash deposit, a bond of an insurance company, or such other security as may be acceptable to the Planning Authority, to secure the satisfactory reinstatement of the site upon cessation of the project, coupled with an agreement empowering the Planning Authority to apply such security or part thereof to such reinstatement. The form and amount of the security shall be as agreed between the Planning Authority.</p>	
22	<p>Prior to commencement of development, the developer shall lodge with the Planning Authority a cash deposit, a bond of an insurance company, or such other security as may be acceptable to the planning authority, to secure the reinstatement of public roads that may be damaged by the transport of materials to the site, coupled with an agreement empowering the Planning Authority to apply such security or part thereof to the satisfactory reinstatement of the public road. The form and amount of the security shall be as agreed between the Planning Authority.</p>	<p>In the interest of traffic safety and the proper planning and sustainable development of the area.</p>

Consent of Council for planning purposes only. No other consent required for any other use.



Paul Murphy

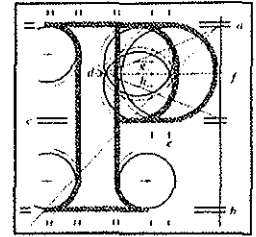
20/02/2012

SENIOR PLANNER'S REPORT

*For inspection purposes only.
Consent of copyright owner required for any other use.*

Our Ref: PL 04.240329
 P.A.Reg.Ref: 11/4945
 Your Ref: Janssen Biologics (Ireland)

An Bord Pleanála



Arup Consulting Engineers,
 15, Oliver Plunkett Street,
 Cork.

3⁰ NOV 2012

Appeal Re: Erection of 1 no. turbines, height 100m, blade radius 50.5m and associated works.
 Barnahely, Ringaskiddy, Co. Cork

Dear Sir/Madam,

An order has been made by An Bord Pleanála determining the above-mentioned appeal under the Planning and Development Acts 2000 to 2011. A copy of the order is enclosed.

In accordance with section 146(5) of the Planning and Development Act 2000, as amended, the Board will make available for inspection and purchase at its offices the documents relating to any matter falling to be determined by it, within 3 days following the making of its decision. The documents referred to shall be made available for a period of 5 years, beginning on the day that they are required to be made available. In addition, the Board will also make available the Inspector's Report, the Board Direction and Board Order in respect of the matter on the Board's website (www.pleanala.ie). This information is normally made available on the list of decided cases on the website on the Wednesday following the week in which the decision is made.

The Public Access Service for the purpose of inspection/purchase of file documentation is available on weekdays from 9.15am to 5.30pm (including lunchtime) except on public holidays and other days on which the office of the Board is closed.

In cases where a grant of (full) planning permission is notified by the Board, it is policy to include a copy of the Department of the Environment and Local Government's Leaflet PL11 - **Guide to the Building Control System** and a copy of the Health and Safety Authority's leaflet **Safety and Health on Construction Projects - The Role of Clients** with the notification. These leaflets are issued at the request of the above bodies.

Yours faithfully,

M. McGrath
 Mary McGrath,
 Administrative Assistant.

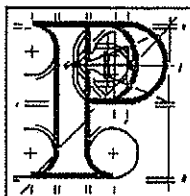
ARUP Cork		Job No:			
		File A	B	C	
Proj Man:		Init:	Date:		
Date:		- 3 DEC 2012		OM:	
To:	Init.	Date	To:	Init.	Date

Encl:

BP 100LN.ltr



An Bord Pleanála



PLANNING AND DEVELOPMENT ACTS 2000 TO 2011

Cork County

Planning Register Reference Number: 11/04945

An Bord Pleanála Reference Number: PL 04.240329

APPEAL by Tricia Treacy of Swanacre, Ballyduff, Cloyne, County Cork and by Mark O'Leary of Seamount, Curraghbinny, Carrigaline, County Cork against the decision made on the 21st day of February, 2012 by Cork County Council to grant subject to conditions a permission to Janssen Biologics (Ireland) care of John O'Mahony of Arup, 15 Oliver Plunkett Street, Cork in accordance with plans and particulars lodged with the said Council.

PROPOSED DEVELOPMENT: Erection of one number wind turbine with hub height of up to 100 metres, blade radius of up to 50.5 metres and overall height from ground to tip of blade of up to 150.5 metres, upgrade of existing site roads, construction of internal site tracks and all other associated works at their lands at Barnahely, Ringaskiddy, County Cork.

DECISION

GRANT permission for the above proposed development in accordance with the said plans and particulars based on the reasons and considerations under and subject to the conditions set out below.

PK

MATTERS CONSIDERED

In making its decision, the Board had regard to those matters to which, by virtue of the Planning and Development Acts and Regulations made thereunder, it was required to have regard. Such matters included any submissions and observations received by it in accordance with statutory provisions.

REASONS AND CONSIDERATIONS

Having regard to,

- (a) national policy and government commitments relating to the development of sustainable energy sources,
- (b) the provisions of the Wind Energy Development Guidelines for Planning Authorities issued by the Department of the Environment, Heritage and Local Government in June, 2006,
- (c) the Wind Energy Strategy as set out in the Cork County Development Plan, 2009, as amended (County Development Plan 2nd, Edition January, 2012), particularly paragraph 6.7.12 and Objectives INF 7-4 (b) and (d) which provides that in areas covered by Objective ECON 3-2 'Locations for Large-Scale Industrial Development' (including Ringaskiddy) wind energy proposals can be considered on their individual merits,
- (d) the zoning of the site of the proposed development in the Carrigaline Electoral Area Local Area Plan 2011 as part of the 'Existing Built-Up Area' within the Ringaskiddy peninsula which is an area that already accommodates large scale industrial development and is zoned to accommodate future expansion of this industrial base,
- (e) the nature of the proposed development which provides for the auto-generation of energy from a renewable source at an existing manufacturing base thereby enhancing the environmental sustainability of the development,
- (f) the existing character of Cork Harbour which reflects the multiplicity of industrial, port, commercial, leisure and other uses already established at this location,
- (g) the separation distance between the proposed wind turbine and nearby dwellings, and
- (h) the mitigation measures set out in the Environmental Impact Statement and other documentation accompanying the appeal submission.

PK
it is considered that, subject to compliance with the conditions set out below, the proposed development would not interfere with the character of the landscape of Cork Harbour or with views or prospects of special amenity value, would not seriously injure the residential amenity of the area and would be in accordance with the proper planning and sustainable development of the area.

The Board considered the Environmental Impact Statement submitted with the planning application (including mitigation measures therein), the further information submitted by the applicant in the course of the planning application and the appeal, the submissions from the planning authority and the appellants and the Inspector's assessment of environmental impacts. The Board completed an Environmental Impact Assessment and concluded that the proposed development would not have a significant adverse effect on the environment.

The Board considered the Statement for Appropriate Assessment submitted with the planning application and carried out an Appropriate Assessment of the proposed development having particular regard to the potential for impacts on nearby Cork Harbour Special Protection Area. Having regard to the nature and scale of the proposed development, the nature of the receiving environment and the mitigation measures set out in the course of the planning application and the appeal, the Board is satisfied that the proposed development, on its own or in combination with other plans or projects, would not adversely affect the integrity of a European site in view of the site's conservation objectives.

CONDITIONS

1. The development shall be carried out in accordance with the plans and particulars lodged with the application, as amended by further plans and particulars submitted on 21st December, 2011 except as may otherwise be required in order to comply with the following conditions. Where such conditions require details to be agreed with the planning authority, the developer shall agree such details in writing with the planning authority prior to the commencement of development and the development shall be carried out and completed in accordance with the agreed particulars.

Reason: In the interest of clarity.

2. The proposed wind turbine shall be re-located on site towards the north-west corner of the site as indicated on drawing C2465.40/SK-006 Rev.P1 forming part of the further information submitted by the Applicant and received by the Planning Authority on 21st December, 2011.

PK
Reason: In the interest of clarity and in order to maximise the separation distance between the proposed wind turbine and the site boundary and the northern side of the proposed N28 re-aligned carriageway and in accordance with the general standards recommended in the Wind Energy Development Guidelines for Planning Authorities, 2006

3. The developer shall ensure that all construction methods and environmental mitigation measures set out in the Environmental Impact Statement and in the further information submission received by the planning authority are implemented in full.

Reason: In the interest of protection of the environment.

4. The period during which the development hereby permitted may be carried out shall be ten years from the date of this order.

Reason: Having regard to the nature of the development the Board considers it appropriate to specify a period of validity of this permission in excess of five years.

5. The permitted operational period shall be 25 years from the date of commissioning of the proposed wind turbine.

Reason: To enable the planning authority to review its operation in light of the circumstances then prevailing.

6. Details of the permitted turbine and associated structures, including design, height and colour shall be submitted to, and agreed in writing with, the planning authority. Cables from the turbine shall be run underground within the site.

Reason: In the interest of visual and environmental amenity.

7. (a) Prior to the commencement of development, a transportation and traffic management plan for the construction phase shall be submitted to, and agreed in writing with, the planning authority. This plan shall incorporate details of the turbine delivery route within the county, road network to be used by construction traffic, including over-sized loads, and detailed arrangements for the protection of bridges, culverts or other structures to be traversed, as may be required.

- (b) Where works to the public road are required to facilitate the proposed development the details of these works shall be subject to the prior written agreement of the planning authority.

Reason: In the interest of traffic safety.

8. Drainage arrangements and the disposal of surface water throughout the site shall comply with the requirements of the planning authority for such works and services.

Reason: In the interest of public health and to ensure a proper standard of development.

9. Upon completion of the wind turbine details of 'as constructed' co-ordinates and elevations of the turbine shall be submitted to the Irish Aviation Authority. Warning lights shall be affixed to the turbine, at the developer's expense, in accordance with the requirements of the planning authority.

Reason: In the interest of aviation safety.

10. Prior to the commencement of development, the developer shall agree a protocol for assessing any impact on radio or television or other telecommunication reception in the area. In the event of interference occurring, it shall be the responsibility of the developer to mitigate such interference according to a methodology to be agreed with the planning authority.

Reason: In the interest of residential amenity.

11. Prior to the commissioning of the proposed wind turbine, the developer shall agree in writing with the planning authority a shadow flicker monitoring programme to determine actual flicker effects at agreed locations following commissioning of the turbine, and shall implement an agreed programme to mitigate the impact on these receptors, and any other impacted receptors following a review of the monitoring programme. The developer shall comply with any mitigation measures deemed necessary by the planning authority including the intermittent switching off of the turbine as a result of the monitoring.

Reason: In the interest of residential amenity.

12. Upon termination of the use of the wind turbine it shall be dismantled, and all above ground elements removed from the site, and the site shall be restored to its existing condition in consultation with the planning authority.

Reason: In the interest of visual amenity and public safety.

13. (a) Prior to the commencement of development, a detailed environmental management plan for the construction stage of the proposed development shall be submitted, generally in accordance with the Environmental Impact Statement and the submissions made in accordance with the planning application and the appeal, for the written agreement of the planning authority.
- (b) The construction environmental management plan shall incorporate the following:
- (i) a detailed construction programme;
 - (ii) a detailed method statement for construction;
 - (iii) a site drainage management plan;
 - (iv) a construction waste and demolition management plan, and
 - (v) an emergency response plan.

Reason: In the interest of protection of the environment and sustainable waste management.

14. Prior to the commencement of development, the developer shall lodge with the planning authority a cash deposit, a bond of an insurance company, or such other security as may be acceptable to the planning authority, to secure the satisfactory reinstatement of the site upon cessation of the project, coupled with an agreement empowering the planning authority to apply such security or part thereof to such reinstatement. The form and the amount of the security shall be as agreed between the planning authority and the developer or, in default of agreement, shall be referred to An Bord Pleanála for determination.

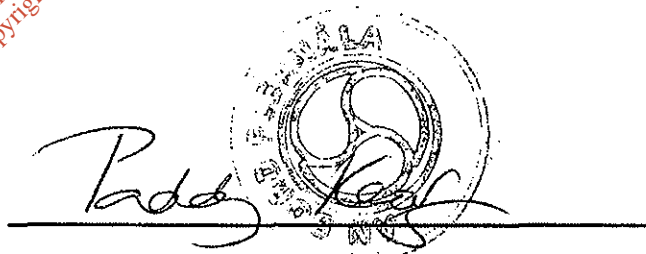
Reason: In the interest of orderly development and visual amenity and to ensure the satisfactory reinstatement of the site.

pr

- 15 The developer shall pay to the planning authority a financial contribution in respect of public infrastructure and facilities benefiting the development in the area of the planning authority that is provided or intended to be provided by or on behalf of the authority in accordance with the terms of the Development Contribution Scheme made under Section 48 of the Planning and Development Act 2000. The contribution shall be paid prior to the commencement of development or in such phased payments as the planning authority may facilitate and shall be subject to any applicable indexation provisions of the Scheme at the time of payment. Details of the application of the terms of the Scheme shall be agreed between the planning authority and the developer or, in default of such agreement, the matter shall be referred to the Board to determine the proper application of the terms of the Scheme.

Reason: It is a requirement of the Planning and Development Act 2000 that a condition requiring a contribution in accordance with the Development Contribution Scheme made under Section 48 of the Act be applied to the permission.

For inspection purposes only.
Consent of copyright owner required for any other use.



**Member of An Bord Pleanála
duly authorised to authenticate
the seal of the Board.**

Dated this 29th day of November 2012.

10. How long should it take to get a Fire Safety Certificate?

Normally two months, but this may be extended by written agreement between the applicant and the building control authority, e.g. when the authority seeks further information on your application. A Fire Safety Certificate may be granted with or without conditions, or refused.

11. Can I Appeal if I am refused a Fire Safety Certificate?

Yes. An applicant for a certificate can appeal to An Bord Pleanála against a refusal, within one month of the decision (details of the appeal fee are available from your local authority or An Bord Pleanála).

12. Do the Regulations have any requirement for access for people with disabilities?

Yes. The Regulations aim to ensure that buildings other than dwellings are accessible and usable by people with disabilities. From 1 January 2001 all new dwellings must be visitable by people with disabilities. The requirements cover the access and use of buildings, provision of sanitary facilities, audience or spectator facilities.

Technical Guidance Document M - Access for People with Disabilities provides guidance on the provision of:

- at least one entrance accessible to wheelchair users;
- an internal layout which allows disabled people to circulate freely;
- a passenger lift in buildings above a certain size;
- a proportion of hotel guest bedrooms suitable for disabled people;
- wheelchair spaces in theatres, cinemas, concert halls and sports stadiums; and
- facilities for people with hearing impairments in theatres, cinemas, concert halls and places of religious worship.

The law governing building regulations and procedures is primarily set out in the Building Control Act, 1990, the Building Regulations, 1997-2002 and the Building Control Regulations, 1997-2000.

These may be purchased from the Government Publications Sales Office, Sun Alliance House, Molesworth Street, Dublin 2 (Phone 01-6476995/4).

The leaflets in this series are:

A Guide to Planning Permission	PL.1
Making a Planning Application	PL.2
Commenting on a Planning Application	PL.3
Building A House - The Planning Issues	PL.4
Doing Work around the House -The Planning Issues	PL.5
Agriculture and Farm Development -The Planning Issues	PL.6
Planning for the Business Person	PL.7
The Development Plan	PL.8
Environmental Impact Assessment	PL.9
Making a Planning Appeal	PL.10
A Guide to the Building Regulations	PL.11
A Guide to Architectural Heritage	PL.12



PL 11 - Guide to the Building Control System

Tá leagan Gaeilge den bhileog seo ar fáil.

PL 11
October, 2002


Printed on recycled paper
containing 100%



- This leaflet is a simple guide to understanding the building control system, which applies to the design and construction of new buildings, extensions and material alterations to and certain changes of use of existing buildings.

The leaflet is intended as a practical guide. It is not a definitive legal interpretation of building control law. For more information, you should consult your local building control authority.

1. What are the Building Regulations 1997-2002?

Building Regulations are a set of legal requirements for the design and construction of new buildings, extensions and material alterations to and certain changes of use of existing buildings.

Building Regulations provide for, in relation to buildings, the health, safety and welfare of people, conservation of fuel and energy, and access for people with disabilities.

The Consolidated Regulations came into force on 1 July, 1998, and replace the Building Regulations, 1991 (as amended). The amended Part M came into force on 1 January, 2001. The amended Part L will come into force on 1 January, 2003 (new dwellings) and 1 July, 2003 (replacement of external doors, windows and roof lights).

2. How are the Regulations framed?

The Regulations comprise a set of legal requirements, expressed in simple functional statements. These address the following matters:

Structure	-	Part A
Fire Safety	-	Part B
Site Preparation and Resistance to Moisture	-	Part C
Materials and Workmanship	-	Part D
Sound	-	Part E
Ventilation	-	Part F
Hygiene	-	Part G
Drainage & Waste Water Disposal	-	Part H
Heat Producing Appliances	-	Part J
Stairways, Ladders, Ramps and Guards	-	Part K
Conservation of Fuel and Energy	-	Part L
Access for People with Disabilities	-	Part M

Technical guidance on how to comply with these requirements are set out in twelve separate Technical Guidance Documents, which deal with each of the above areas.

3. How do they affect me?

If you are having construction work carried out, the work must comply with Regulations. The Regulations do not apply to works consisting of repairs or renewal (as defined in the Regulations).

4. What if I fail to comply?

The primary responsibility for compliance rests with designers, builders and building owners. Building control authorities have powers to inspect design documents and buildings, as well as powers of enforcement and prosecution where breaches of the Regulations occur.

There are heavy penalties, including fines and imprisonment, for breaches of the Regulations. In addition, when it comes to selling your property, you may have difficulties if you cannot satisfy the purchaser's solicitor that the requirements of the Regulations have been met.

5. What control arrangements are in place?

The Building Control Regulations, 1997-2002 supplement the basic system of enforcement referred to in Question 4 above.

Two important control arrangements are provided:

- Commencement Notice
- Fire Safety Certificate

6. What is a Commencement Notice?

A commencement notice is a notification to a building control authority that a person intends to carry out either works or a material change of use to which the Building Regulations apply. The notice must be given to the authority not more than 28 days and not less than 14 days before commencement of works or a material change of use.

The notice must be accompanied by a Commencement Notice Fee, based on the number of buildings (details available from your local building control authority). Copies of a commencement notice can also be obtained from the building control authority.

Commencement notices are required for the following:

- the erection of a building;
- a material alteration or extension of a building;
- a material change of use of a building;
- works in connection with the material alteration (excluding minor works) of a shop, office or industrial building.

A commencement notice is not required for works or a change of use which are exempted development under the planning code, and for which a fire safety certificate is not required. Information on exempted development is given in other leaflets in this series, including PL 5 - Doing Work about the House, PL 6 - Agricultural and Farm Development, and PL 7 - Planning for the Business Person.

7. What is a Fire Safety Certificate?

A certificate granted by a building control authority certifies that the building or works, if constructed in accordance with the plans, documents and information submitted to the authority, would comply with the requirements of Part B of the Second Schedule to the Building Regulations, 1997-2002.

8. Do I need a Fire Safety Certificate?

With the exception of houses and certain agricultural buildings, a fire safety certificate is required for all new buildings (including apartments and flats), as well as material changes of use and certain alterations and extensions to buildings. A fire safety certificate must be obtained before work starts.

9. Where do I get a Fire Safety Certificate?

Before you begin any work or make a material change of use, you should apply to the local building control authority for a fire safety certificate. Application forms are available from the authority and should be submitted together with -

- plans, calculations and specifications for the works or building;
- details of the nature and extent of the proposed use and, where appropriate, of the existing use of the building;
- the appropriate fee, based on floor area (details available from your local authority).

Any application not including the above can be rejected by the authority as invalid.

Safety and Health on Construction Projects The Role of Clients

A summary of the client's role under the Safety, Health and Welfare at Work
(Construction) Regulations, 2006

Who is a 'Client'?

The Safety, Health and Welfare at Work (Construction) Regulations, 2006 interprets 'client' as a person for whom a project is carried out, in the course or furtherance of a trade, business or undertaking, or who undertakes a project directly in the course or furtherance of such trade, business or undertaking;

You are not a client if you are having construction work done on your own domestic dwelling e.g. an extension on to your kitchen, or you are building your own house.

You are a client if the extension onto your own domestic dwelling is in the course or furtherance of a trade, business or undertaking, or who undertakes a project directly in the course or furtherance of such trade, business or undertaking, e.g. if you are building on an office.

What are the duties of a Client?

The Client must for every project:

- appoint, in writing before design work starts, a competent and adequately resourced project supervisor for the design process (PSDP).
In order to be competent the PSDP must have adequate training, knowledge, experience to carry out the project the PSDP must have adequate resources available to carry out the project in a safe manner;
- appoint, in writing before construction begins, a competent and adequately resourced project supervisor for the construction stage (PSCS). In order to be competent the PSCS must have adequate training, knowledge, experience and resources;
- be satisfied that each designer and contractor appointed has adequate training, knowledge, experience and resources for the work to be performed;
- co-operate with the project supervisor and supply necessary information;
- keep and make available the safety file for the completed structure. The safety file contains information on the completed structure that will be required for future maintenance or renovation (The client must keep the file in a secure place, either on the premises to which it relates or held centrally, and if the client wishes, it may be stored electronically or on microfiche.);
- provide a copy of the safety and health plan prepared by the PSDP to every person tendering for the project. The safety plan documents show how health and safety on the project will be managed to project completion.
- notify the Authority of the appointment of the PSDP where construction is likely to take more than 500 persons days or 30 working days.

JUDICIAL REVIEW NOTICE

Judicial review of An Bord Pleanála decisions under the provisions of the Planning and Development Act 2000 (as amended)

A person wishing to challenge the validity of a Board decision may do so by way of judicial review only. Sections 50, 50A and 50B of the Planning and Development Act 2000 (as substituted by section 13 of the Planning and Development (Strategic Infrastructure) Act 2006, as amended/substituted by sections 32 and 33 of the Planning and Development (Amendment) Act 2010 and as amended by sections 20 and 21 of the Environment (Miscellaneous Provisions) Act 2011) contain provisions in relation to challenges to the validity of a decision of the Board.

The validity of a decision taken by the Board may only be questioned by making an application for judicial review under Order 84 of The Rules of the Superior Courts (S.I. No. 15 of 1986). Sub-section 50(6) of the Planning and Development Act 2000 requires that subject to any extension to the time period which may be allowed by the High Court in accordance with subsection 50(8), any application for judicial review must be made within 8 weeks of the decision of the Board. It should be noted that any challenge taken under section 50 may question only the validity of the decision and the Courts do not adjudicate on the merits of the development from the perspectives of the proper planning and sustainable development of the area and/or effects on the environment. Section 50A states that leave for judicial review shall not be granted unless the Court is satisfied that there are substantial grounds for contending that the decision is invalid or ought to be quashed and that the applicant has a sufficient interest in the matter which is the subject of the application or in cases involving environmental impact assessment is a body complying with specified criteria.

Section 50B contains provisions in relation to the cost of judicial review proceedings in the High Court relating to specified types of development (including proceedings relating to decisions or actions pursuant to a law of the state that gives effect to the public participation and access to justice provisions of Council Directive 85/337/EEC i.e. the EIA Directive and to the provisions of Directive 2001/12/EC i.e. Directive on the assessment of the effects on the environment of certain plans and programmes). The general provision contained in section 50B is that in such cases each party shall bear its own costs. The Court however may award costs against any party in specified circumstances. There is also provision for the Court to award the costs of proceedings or a portion of such costs to an applicant against a respondent or notice party where relief is obtained to the extent that the action or omission of the respondent or notice party contributed to the relief being obtained.

General information on judicial review procedures is contained on the following website, www.citizensinformation.ie.

Disclaimer: The above is intended for information purposes. It does not purport to be a legally binding interpretation of the relevant provisions and it would be advisable for persons contemplating legal action to seek legal advice.

Modified 30/11/2011

FÓGRA FAOI ATHBHREITHNIÚ BREITHIÚNACH

Athbhreithniú breithiúnach ar chinneadh a rinne An Bord Pleanála faoi fhorálacha an Achta um Pleanáil agus Forbairt, 2000 (arna leasú)

Nuair is mian le duine agóid dhlíthiúil a chur in aghaidh cinnidh an Bhoird caithfear é sin a dhéanamh trí athbhreithniú breithiúnach amháin. Tá na forálacha chun agóid dhlíthiúil a chur in aghaidh cinnidh an Bhoird le fáil in ailt 50, 50A agus 50B san Acht um Pleanáil agus Forbairt, 2000 (arna ionadú le halt 13 den Acht um Pleanáil agus Forbairt (Bonneagar Straitéiseach) 2006, le hailt 32 agus 33 den Acht um Pleanáil agus Forbairt (leasú), 2010 agus le hailt 20 agus 21 den Acht Comhshaoil (Forálacha Ilghnéitheacha), 2011.)

Ní féidir ceistiú a dhéanamh in aghaidh cinnidh an Bhoird ach amháin trí iarratas ar athbhreithniú breithiúnach faoi Ordú 84 de Rialacha na nUaschúirteanna (I.R. Uimhir 15 de 1986). Faoi réir fho-alt 50(6) den Acht um Pleanáil agus Forbairt, 2000 déanfar iarratas ar chead chun iarratas a dhéanamh ar athbhreithniú breithiúnach laistigh den tréimhse 8 seachtain den dáta a rinne an Bord an cinneadh nó laistigh d'aon sineadh ama a cheadaíonn an Ard-Chúirt faoi fho-alt 50(8). Tabhair faoi deara nuair atá athbhreithniú breithiúnach i gceist faoi alt 50 nach féidir ach bailíocht an chinnidh a cheistiú agus ní thugann an Chúirt aon chinneadh faoi fhiúntas na forbartha ó thaobh prionsabail pleanála cuí nó forbairt inchothaithe na háite nó éifeachtaí ar an timpeallacht. Tá sé leagtha síos in alt 50 nach ndéanfar cead d'athbhreithniú breithiúnach muna bhfuil an Chúirt sásta go bhfuil forais shubstaintiúla ann chun argóint a dhéanamh go bhfuil an cinneadh neamhbhailí nó gur ceart é a neamhniú agus go bhfuil suim shásúil ag an iarratasóir leis an ábhar i gceist san iarratas nó i gcásanna a bhaineann le measúnacht tionchair timpeallachta gur eagraíocht í an t-iarratasóir a chomhlíonann coinníollacha áirithe.

Tá forálacha in alt 50B mar gheall ar chostais maidir le himeachtaí san Ard-Chúirt i dtaobh athbhreithniú breithiúnach i gcásanna áirithe (lena n-áirítear imeachtaí faoi chinntí nó gníomhartha de bhun dlí de chuid an Stáit lena dtugtar éifeacht do na forálacha faoi rannpháirtíocht an phobail agus rochtain ar an gceartas atá leagtha amach i dTreoir 85/337/CEE i.e. an Treoir faoi mheasúnacht tionchair timpeallachta agus na forálacha i dTreoir 2001/42/CE maidir le héifeachtaí pleananna agus clár áirithe ar an timpeallacht a mheasúnú). Is í an fhoráil ghinearálta in imeachtaí lena mbaineann alt 50B ná go n-íocfaidh gach páirtí a chostais féin. Is féidir leis an gCúirt costais a bhronnadh i gcoinne aon pháirtí i gcásanna áirithe. Chomh maith le sin tá forálacha i bhfeidhm ionas gur féidir leis an gCúirt iomlán a chostas nó cuid díobh a bhronnadh ar an iarratasóir, in aghaidh fhreagróra nó fhógrapáirtí i gcásanna ina bhfaightear faoiseamh mar gheall ar gníomhú nó neamhfheidhm an fhreagróra nó an fhógrapáirtí.

Tá eolas ginearálta faoi athbhreithniú breithiúnach le fáil ar an suíomh idirlín www.citizensinformation.ie.

Séanadh: Tá an t-eolas thuas tugtha mar threoirlíne. Ní éilítear gur léirmhíniú dlí faoi na forálacha ábhartha atá ann agus dá mbeadh sé ar intinn ag éinne cás dlí a thógáil in aghaidh an Bhoird bheadh sé inmholta comhairle dlí a fháil ar dtús

Athbhreithnithe 30/11/2011

APPENDIX D

Noise Emission Data from EIS

*For inspection purposes only.
Consent of copyright owner required for any other use.*

Table 9.7 Overview of noise impact assessment. Based on a sound power emission of 106 dB(A) L_{WA} for an Enercon E-101, 98m hub height, wind speed 10m/s (at z=10m)

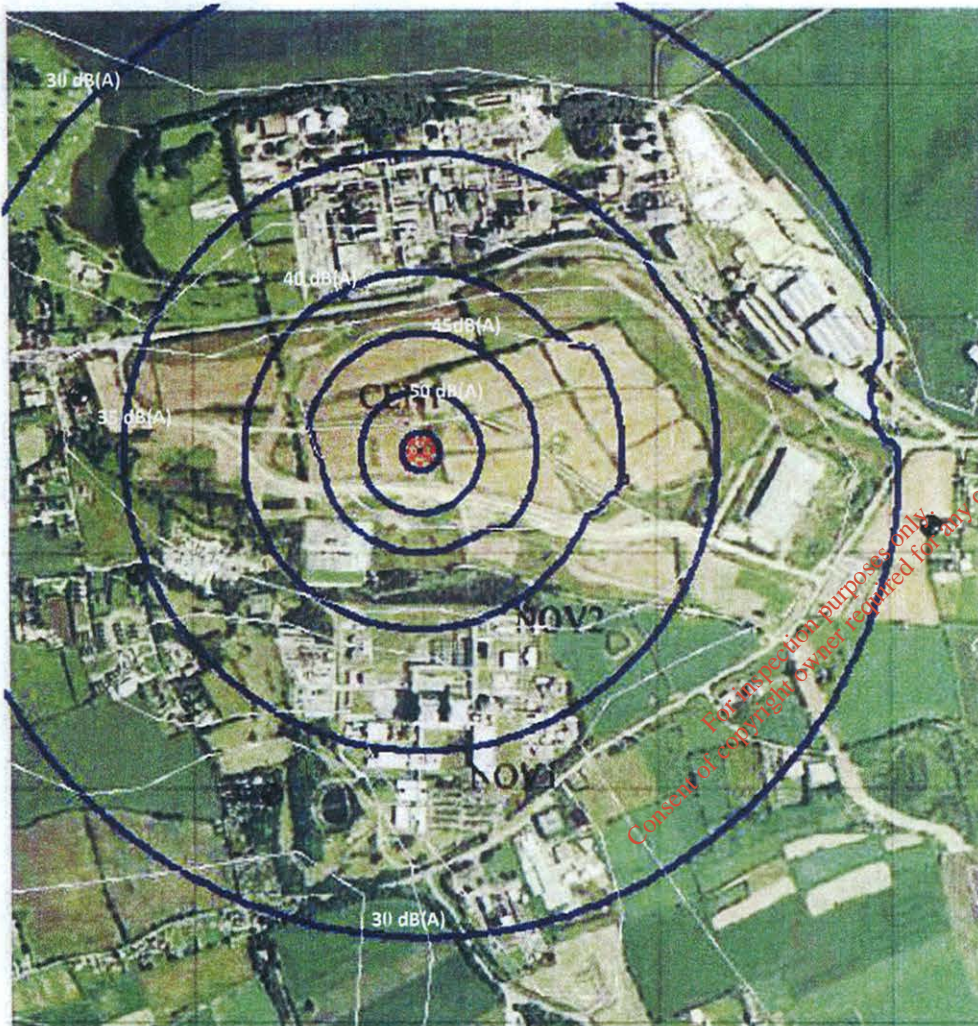
Key Noise Sensitive Locations	Highest Janssen Biologics (Ireland) Wind Turbine Noise ¹ L_{A90} dB(A)	Highest Cumulative Wind Turbine Noise ² L_{A90} dB(A)	Compliance with EHLG 43 dB(A) Nighttime Criterion	Existing Industrial Noise, Nighttime ³ dB(A)	Wind Turbine and Existing Industrial Noise L_{Aeq} ⁴ dB(A)	Compliance with Guideline EPA Noise Limits
NSL1, Shanbally	33	36	yes	36	40	yes
NSL2, Shanbally South	35	38	yes	36	41	yes
NSL5, Ringaskiddy to East of Janssen Biologics (Ireland)	29	36	yes	37	40	yes

¹ Calculated noise from the single wind turbine at Janssen Biologics (Ireland), receptors downwind of the wind turbine

² Sum of noise from Janssen Biologics (Ireland) wind turbine, and from two wind turbines at Novartis (contribution from DePuy (Ireland) and GSK is negligible)

³ This is the specific noise level, which is the component of the ambient noise that can be attributed to a specific industrial source. If there is no interfering noise, it is measured using the L_{Aeq} parameter. If there is interfering noise, it is frequently best estimated using the measure L_{A90} parameter

⁴ 2 dB is added to wind turbine L_{A90} noise, to give the L_{Aeq} , which is then added to the existing industrial noise



Calculated wind turbine noise contour map, L_{A90} values. Noise from Janssen Biologics (Ireland) wind turbine only, with downwind propagation assumed in all directions. Based on a sound power emission of 106 dB(A) L_{WA} for an Enercon E-101, 100m hub height, wind speed 10m/s (at $z=10m$).

Ordnance Survey Ireland Licence No EN 0002811 © Ordnance Survey Ireland/ Government of Ireland

Not to Scale

		<p>Job Title: Janssen Biologics (Ireland) Wind Energy Project Project No.: C2465.40 Date: 29 April 2011</p> 	<p>Figure Title: Calculated Wind Turbine Noise Envelope (L_{A90} Values)</p>	<p>Figure No.: 9.4</p>
---	---	---	--	------------------------------------



Calculated cumulative wind turbine noise contour map, L_{A90} values. This map represents cumulative wind turbine noise from the Janssen Biologics (Ireland) wind turbine, and from the two wind turbines which are proposed for the Novartis site to the south. Downwind propagation assumed in all directions. Based on a sound power emission of 106 dB(A) L_{WA} for Enercon E-101, 100m hub height, wind speed 10m/s (at $z=10m$).

Ordnance Survey Ireland Licence No EN 0002811 © Ordnance Survey Ireland/ Government of Ireland

Not to Scale

ARUP



Job Title:
**Janssen Biologics (Ireland)
Wind Energy Project**

Project No.: C2465.40 Date: 29 April 2011



Figure Title:
**Calculated Cumulative Wind
Turbine Noise Envelope (L_{A90}
Values)**

Figure No.:

9.5

EPA,
Regional Inspectorate,
Inniscarra,
Co. Cork

Janssen Biologics (Ireland),
Barnahely,
Ringaskiddy,
Co Cork.
Tel+353 21 4973257

07th March 2014

For the attention of:

Pamela McDonnell



Reference: Technical Amendment to the Integrated Pollution Prevention & Control Licence P0778-01 for the operation of a single 3MW wind turbine at Janssen Biologics (Ireland) Ltd.

Dear Pamela,

I refer to your letter received on 4th February 2014 in response to our technical amendment submitted on 15th August 2013. Following your response, we have now completed an updated technical amendment (2 copies attached) in accordance with the *Guidance Note on Noise Assessment of Wind Turbine Operations at EPA Licensed Sites (NG3) (June 2013)*.

The wind turbine project completion date is 3rd April 2014 and we will need to have our updated technical amendment reviewed and approved prior to this date.

Can you let me know as soon as possible that the above timelines can be achieved.

Yours Sincerely,

Liam O'Leary
Utilities Facilitator
loleary@its.jnj.com

LICENCE REFERENCE No.	Technical Amendment to Comply with the IPPC Licence	REPORT VERSION
P0778-01	Operation of a single 3MW wind turbine at Janssen Biologics (Ireland) Ltd	Final



*For inspection purposes only.
Consent of copyright owner required for any other use.*

Technical Amendment for the
operation of a single 3MW Wind
Turbine at Janssen Biologics
(Ireland) Ltd

TABLE OF CONTENTS

1	INTRODUCTION	5
1.1	Project Contractual Basis & Personnel Involved	5
1.2	Work Brief	5
2	BACKGROUND INFORMATION	5
2.1	Details of the Proposed Development	5
2.2	Planning Process & Technical Amendment	6
3	EIS REVIEW	6
3.1	Format of EIS	6
3.2	Summary of EIS Findings	7
4	NOISE ASSESSMENT OF WIND TURBINE OPERATIONS AT EPA LICENCED SITES (NG3)	8
4.1	Guidance Document Background	8
4.2	Noise Impact Assessment Methodology	8
5	NOISE IMPACT ASSESSMENT	10
5.1	Turbine Noise Modelling	10
5.2	Noise Monitoring Information	10
5.3	Existing Site Noise Impact	12
5.4	Predicted Cumulative Noise Impact	12
6	CONCLUSIONS	13
7	REFERENCES	14

Consent of copyright owner required for any other use.
For inspection purposes only

FIGURES

- Figure 1 – Predicted Turbine Noise Contour Map
- Figure 2 – Predicted Cumulative Noise Contour Map (Day)
- Figure 3 – Predicted Cumulative Noise Contour Map (Night)

APPENDICES

- Appendix 1 – EIS Non Technical Summary
- Appendix 2 – Completed NG3 Turbine Noise Modelling Template
- Appendix 3 – Completed NG3 Assessment Results Template
- Appendix 4 – Summary Data Sheet for the Enercon E101 – Sound Power Levels
- Appendix 5 – Enercon Sound Power Level Warranty

DOCUMENT CONTROL

Project Title: Wind Turbine Technical Amendment Report
Licence No. P0778-01
Project No: 50275
Status: Final
Client: Janssen Biologics Ltd
Client Details: Janssen Biologics (Ireland) Ltd., (JBI), Barnahely, Ringaskiddy, Co. Cork.
Issued By: Verde Environmental Consultants Ltd

Document Production / Approval Record

	Name	Signature	Date	Position	% Input
Prepared by (consultant)	Cyril Tynan		3 Mar 2014	Senior EHS Consultant	90
Approved by (consultant)	Kevin Cleary		5 March 2014	Project Director	10
Site Approval by	John Lynch		5 March 2014	Environmental Manager	N/A

For inspection purposes only. Consent of copyright owner required for any other use.

LIMITATIONS

The project objectives were to complete a Technical Amendment to IPPC Licence (P0778-01) for the operation on a wind turbine the for the Janssen Biologics Ltd facility in Barnahely, Ringaskiddy, Co. Cork. An Environmental Impact Statement (EIS) for the proposed turbine development was prepared by Arup on behalf of Janssen in 2011. The EIS contained baseline noise measurements and predicted impact of the proposed development.

The current report provides a review of the EIS and updates the EIS information considering the Guidance Note on Noise Assessment of Wind Turbine Operations at EPA Licensed Sites (NG3), published by the Environmental Protection Agency, in June 2011. Verde have used historical modelling and monitoring results and therefore this report is limited by the accuracy of the available data.

*For inspection purposes only.
Consent of copyright owner required for any other use.*

1 INTRODUCTION

1.1 Project Contractual Basis & Personnel Involved

Verde Environmental Consultants, (VEC) was commissioned by Janssen Biologics Ltd. (Janssen) to complete a Technical Amendment of IPPC Licence (P0778-01) for the construction of a single three megawatt wind turbine and related infrastructure at the Janssen site at Barnahely, Ringaskiddy, Co. Cork.

1.2 Work Brief

The agreed work brief involved the following:

- Review of an existing Environmental Impact Statement (EIS) report for the site
- Review the existing application for the installation of a wind turbine at the site.
- Update the existing information taking into consideration the Guidance Note on Noise Assessment of Wind Turbine Operations at EPA Licensed Sites (NG3) as published by the EPA in 2011.

2 BACKGROUND INFORMATION

2.1 Details of the Proposed Development

Janssen Biologics (Ireland) intends to construct a new wind turbine with an output of up to three megawatts and associated infrastructure on the site of its existing biopharmaceutical manufacturing facility, at Barnahely, Ringaskiddy, County Cork. The proposed development is one a number of wind energy projects proposed by the Cork Lower Harbour Energy Group, of which Janssen Biologics (Ireland) is a member. The Groups renewable energy plan will comprise a total of four wind turbines installed throughout the area, with each turbine generating power for the site it is located on.

Development on the Janssen site will involve the installation of a single Enercon E101 Wind Energy Converter (WEC), wind turbine with a capacity of up to three megawatts, an associated transformer, buried electrical and fibre-optic cabling, and a crane pad. The transformer will be housed within or adjacent to the turbine. The turbine will have a hub height of up to 100 metres with a rotor radius of approximately 50.5 metres. It will be of a typical modern design incorporating a tubular tower and three blades attached to a nacelle housing the generator, gearbox and other operating equipment.

In addition to generating electrical power for the Janssen Biologics (Ireland) facility, electricity will also be exported, from time to time to the national electrical grid via underground cabling. The turbine is projected to have an operating lifetime of 25 years. The wind turbine operations will be controlled from the Janssen Biologics (Ireland) facility and will be operated and maintained in accordance with the relevant Health and Safety regulations. The turbine will operate at all times when wind speeds are suitable, with the exception of downtime for maintenance.

2.2 Planning Process & Technical Amendment

A planning application for the proposed Turbine development was submitted by Arup to Cork County Council on 29th April 2011. An Environmental Impact Statement (EIS) was prepared to provide information on potential environmental impacts of the proposed turbine, and to propose mitigation measures to reduce the residual impacts of the proposed development. The cumulative impacts arising from the proposed development in conjunction with the other Cork Lower Harbour Energy Group wind turbines at the Novartis, DePuy (Ireland) and GlaxoSmithKline (GSK) plants in the area was also assessed as part of this EIS. Planning permission for the turbine development was granted by Cork Co. Council in 2012.

As part of their IPPC Licence (IPPCL Ref P0778-01), Janssen are required to submit a Technical Amendment (TA) to the EPA to account for any changes in site activities and resultant emissions. Janssen have submitted information in this regard in 2013 to include details on noise, air, water and other IPPC considerations. The EPA has requested specifically in relation to noise, that the assessment considers the Guidance Note on Noise Assessment of Wind Turbine Operations at EPA Licensed Sites (NG3) as published by the EPA in June 2011.

It was also recommended that the Executive Summary of the EIS, the Planning Permission and the Planning Report should also be included as part of the TA application information.

3 EIS REVIEW

3.1 Format of EIS

Chapter 9 of the EIS as submitted by Arup on 2011 assesses the potential for environmental noise and vibration impact of the proposed wind turbine at Janssen Biologics. Compliance with guideline noise limits is assessed based on the noise levels from the proposed Janssen turbine but also the cumulative wind turbine noise levels, assuming that all four wind turbines are installed by the LCHEG. Account was also taken of cumulative industrial plus wind turbine noise limits.

The noise impact of the proposed wind turbine at the facility was assessed in accordance with criteria outlined in the Department of Environment Heritage and Local Government Wind Farm Planning Guidelines (EHLG), 2006, which in turn draws on the methodology of the U.K. guidelines (ETSU-R-97). Account was taken in this assessment of Noise Guidance (NG3) guidelines issued by the EPA in draft form in Nov 2010. The conclusions of the EIS however were not presented in the format of the finalised NG3 Guidelines.

Noise monitoring and modelling data is presented in the EIS. The Non-Technical Summary of the EIS is included in Appendix 1 and results and conclusions are discussed overleaf.

3.2 Summary of EIS Findings

As part of the EIS, noise data was collected for noise sensitive locations off-site ((NSL1, NSL2 and NSL5) and long-term monitoring was also done on-site at one location. The nearest residential properties to the site are the noise sensitive locations NSL1, (Shanbally), NSL2 (Shanbally South) and NSL5, (Ringaskiddy to East of the Janssen site). Noise prediction modelling was undertaken and the highest predicted noise levels at these locations due to the proposed wind turbine are in the range 29 to 35 dB(A) LA90. The highest predicted cumulative wind turbine noise levels are in the range 36 to 38 dB(A) LA90.

The cumulative industrial and wind turbine noise at these locations were calculated to be in the range of 40 to 41 dB(A) LAeq, These predicted noise levels were reported to be below the current IPPC Licence Noise Emission limits of 55 dB(A) LAeq during daytime and 45 dB(A) LAeq during night-time, for the Janssen facility.

In terms of audible perceived noise, and taking account of the masking effects of background noise, the impact was concluded to be negligible at the nearest noise sensitive locations to the site. No significant vibration impacts were predicted, arising from either the construction or operation of the proposed development.

For inspection purposes only.
Consent of copyright owner required for any other use.

4 NOISE ASSESSMENT OF WIND TURBINE OPERATIONS AT EPA LICENCED SITES (NG3)

4.1 Guidance Document Background

The Environmental Protection Agency published a Noise Guidance Note (NG3) in June 2011 to assist IPPC and waste licensed sites in assessing the suitability of their sites for wind energy development. The focus of this document was the development of a standardised noise impact assessment methodology to allow sites to assess the impact of wind energy proposals on noise sensitive locations. The methodology provides technical information on assessing and measuring noise in order to ascertain compliance with the proposed limits. The essential points of this guidance document relate to:

- Descriptions of the salient points of wind power generation, wind turbines and wind turbine noise.
- Review of relevant planning legislation, guidance and standards.
- Specified noise prediction methodology
- Proposed daytime (08:00 to 22:00 hrs) and night-time (22:00 to 08:00 hrs) cumulative noise limits for combined site and turbine noise as follows:
 - **Daytime** 55 dB LAr,T.
 - **Night-time** 45 dB LAeq.
 - **Wind turbine noise** not to exceed 45 dB LAeq at any time, or to contain any significant tonal components.
- Where predicted cumulative noise does not comply with the standard noise limits above, an application can be made to the Agency to seek an increase based on measurements of site specific background noise levels.
- Standardised noise impact assessment methodology including measurement and monitoring requirements.
- Standardised templates for providing data analysis, noise predictions and compliance assessments to the Agency.

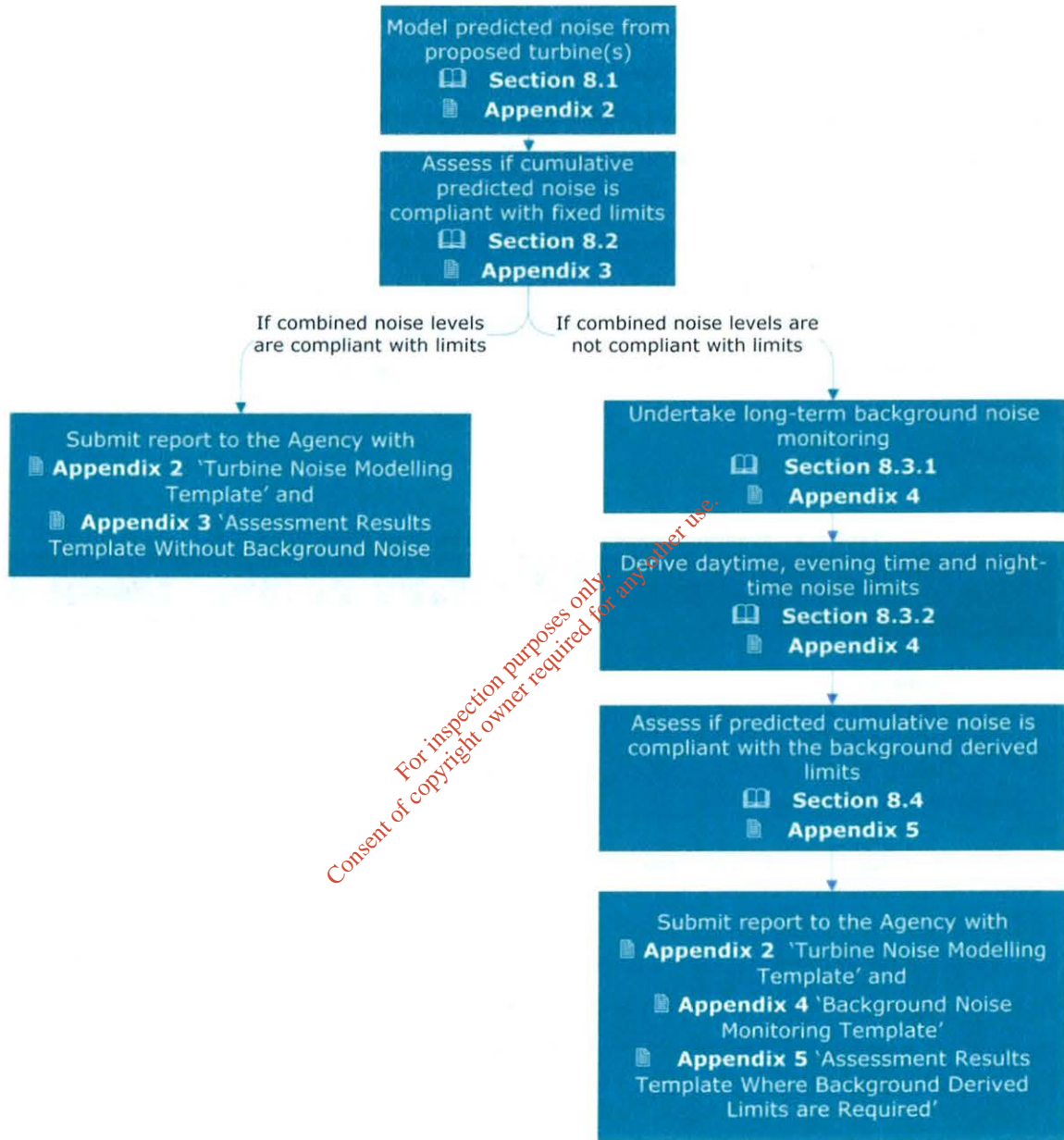
4.2 Noise Impact Assessment Methodology

The guidance describes a noise impact assessment methodology to assess predicted cumulative site noise and compliance with either fixed or background noise derived limits:

- Predicting noise levels of the proposed turbine(s)
- Assessing whether the cumulative predicted turbine and site noise is compliance with the fixed limits (as listed in Section 4.1 above in this report).
- If the predicted noise levels are not compliant with the fixed limits, background noise limits can be derived and the cumulative predicted noise assessed against these.

Fig 4.1 overleaf presents a noise impact assessment flow chart referring to the specific sections of the guidance document.

Figure 4.1 Noise Impact Assessment Flow-chart



For inspection purposes only. Consent of copyright owner required for any other use.

Note:

- Flowchart above is taken directly from the Guidance Note for Noise Assessment of Wind turbine Operations at EPA Licenced sites (NG3) and refers to the relevant sections in the guidance.

5 NOISE IMPACT ASSESSMENT

5.1 Turbine Noise Modelling

Verde reviewed the available noise modelling information for the proposed development and technical specification sheets for the proposed turbine. Previous noise modelling information was available from the EIS prepared by Arup in 2011. Technical information was provided by Enercon GmbH in relation to the proposed Turbine and sound power levels information was provided according to standard IEC 61 400-11 ed 2.

The predicted noise level is a function of the sound power emission from the turbines. The E-101 turbine has a maximum sound power output of 106 dB(A) LWA at a wind speed of 10m/s (measured at 10m height). Noise modelling shows the noise impact on the nearest residential dwellings NSL1, NSL2 and NSL5. Based on turbine location and location of NSLs it can be shown that the Janssen turbine and proposed two wind turbines at Novartis contribute to the cumulative noise, whereas the proposed wind turbines at DePuy and GSK make a negligible contribution.

Table 5.1 – Predicted cumulative wind turbine noise levels as a function of windspeed

Key Noise Sensitive Locations	Cumulative Wind Turbine Noise as Function of Wind Speed, LA90, dB(A) highest value, receptor downwind of nearest turbine						
	4m/s	5m/s	6m/s	7m/s	8m/s	9m/s	10m/s
NSL1 Shanbally	-	29	33	35	36	36	36
NSL2 Shanbally South	-	31	35	37	38	38	38
NSL5 Ringaskiddy NE of Novartis	-	29	33	35	36	36	36

Notes

- Predicted cumulative wind turbine noise levels as a function of windspeed (at z=10m). Based on a sound power emission curve for Enercon E-101, 98m hub height

Noise modelling results are presented in Appendix 2 and Appendix 3 as per the format required in the NG3 Guidelines. Appendix 4 includes a Sound Power Levels summary data sheet for the Enercon E101 turbine and Appendix 5 includes a Sound Power Level Warranty document

5.2 Noise Monitoring Information

5.2.1 On Site Monitoring Data

In order to describe the existing noise environment currently at the site, Verde reviewed all available site noise monitoring data available for the site between 2010 and 2014. The primary source of this information included annual noise monitoring reports that are required as part of the site's IPPC Licence. For some locations, it was observed that mean noise levels varied significantly between 2010 and 2014 due to changes in central operations on site. In these cases only measurement data for 2013 and 2014 was considered for on-site

measurement data. This noise monitoring data was used in order to understand the noise climate on-site and also to determine the noise impact on noise sensitive locations (NSLs). Summary data is presented in Table 5.2.

Table 5.2 – Day & Night Time Noise Levels On-Site

Location	Time	LAeq	LAgo	LA10
N1	Day	49	40	51
	Night	38	35	39
N2	Day	51	43	52
	Night	42	40	44
N3	Day	52	45	55
	Night	47	44	47

Notes

- Data for N1, N2 & N3 (on-site locations) taken from IPPC Licence Reports for 2013 and 2014

5.2.2 Monitoring at Noise Sensitive Locations

Noise monitoring data was available for three noise sensitive locations as part of the EIS Report in 2011. Additional data for noise sensitive locations were available also from annual noise monitoring reports that are required as part of the site’s IPPC Licence. Table 5.2 provides a summary of monitoring data.

Table 5.2 – Day & Night Time Noise Levels at Noise Sensitive Locations (Off-Site)

	Time		LAeq	LAgo	LA10
NSL1	14/01/2011		62	53	65
NSL1-alt*	10/02/2010	Day	43	38	45
NSL1-alt*	07/10/2013		48	43	51
NSL1-alt*	11/02/2010	Night	40	36	40
	07/10/2013		44	41	44
NSL2	03/11/2010	Day	48	42	50
	14/01/2011		52	42	54
	25/11/2010	Night	38	32	39
NSL5**	10/02/2010	Day	44	40	46
	08/10/2013	Day	53	48	56
	11/02/2010	Night	43	37	44
	08/10/2013	Night	43	43	44

Notes

- Data Taken from EIS Report 2011 and also from IPPC Noise Monitoring Reports 2010-2014
- * Data Taken from IPPC Monitoring reports for location NS1
- ** Taken from IPPC Monitoring Reports for location NS2

5.3 Existing Site Noise Impact

Based on available noise data for the site, Verde calculated the noise impact due to the existing site operations site at noise sensitive receptors. The propagation of noise towards the noise sensitive receptors considered site noise only and excluded background noise levels as per NG3 Guidance.

Point source noise measurements were taken on site and noise propagation was calculated based on geometric divergence calculation. No correction was made for atmospheric conditions or ground cover. Table 5.3 summarises the predicted day and night – time noise impact at NSLs.

Table 5.3 – Site Noise Impact on NSLs

Noise Sensitive Location	Calculated Impact due to Site Noise Only Day-time LAeq (dB)	Calculated Impact due to Site Noise Only Night-time LAeq (dB)
NSL1	42	33
NSL2	43	35
NSL5	44	39

Notes

- Calculated using ISO 9613-2 with no correction for meteorological conditions or ground cover.

5.4 Predicted Cumulative Noise Impact

Based on Guidance NG3 the predicted cumulative noise impact was calculated which considers the noise impact due to the following:

- Proposed Janssen Turbine
- Proposed 3 additional turbines in adjacent Cork Lower Harbour Energy Group sites.
- Existing site noise excluding background noise.

Table 5.4 provides a summary of findings and full details are presented in Appendix 3 of this report in the format as required by the NG3 Guidance.

Table 5.4 – Predicted Cumulative Noise Level at NSLs

Location	Description	Applicable Noise Limit	Calculated Cumulative Noise Level (dB) between 6-12m/s windspeed
NSL1	Daytime cumulative noise level, dB LA _r	55	43
	Night-time cumulative noise level, dB LA _{eq}	45	36-38
	Predicted Turbine Noise, dB LA _{eq}	45	33-36
NSL2	Daytime cumulative noise level, dB LA _r	55	44
	Night-time cumulative noise level, dB LA _{eq}	45	38-40
	Predicted Turbine Noise, dB LA _{eq}	45	35-38
NSL5	Daytime cumulative noise level, dB LA _r	55	44-45
	Night-time cumulative noise level, dB LA _{eq}	45	40-41
	Predicted Turbine Noise, dB LA _{eq}	45	33-36

Notes

- No tonal penalty relevant based on measurement and calculation results.
- Windspeed refers to measurement at 10m reference height.

6 CONCLUSIONS

The proposed development involves the installation of a single Enercon E101 Wind Energy Turbine and associated infrastructure at the Janssen Biologics site, Ringaskiddy, Co. Cork. The turbine will have a hub height of up to 100 metres with a rotor radius of approximately 50.5 metres. It is proposed that an additional three turbines of similar construction will be installed in adjacent sites and the noise impact from these turbines is considered in this assessment. The cumulative noise impact from the proposed turbines together with existing noise due to site operations was calculated as part of this assessment. The cumulative noise impact at three chosen noise sensitive locations, NSL1, NSL2 & NSL5 over a range of windspeeds between 6 – 12m/s may be summarised as follows:

- The predicted cumulative day time noise level at NSLs ranges between 43-45 dB; this is below the required noise limit of 55dB.
- The predicted cumulative night time noise level at NSLs ranges between 36-41 dB; this is below the required noise limit of 45dB.
- The predicted turbine noise contribution at NSL ranges between 33-36 dB; this is below the required noise limit of 45dB.

It may be concluded that the predicted noise levels will be in compliance with proposed site noise limit values. It is also noted that based on historical monitoring data for noise sensitive locations the cumulative industrial and wind turbine noise at these locations will have a negligible perceived impact considering the separation distances and the masking effects of ambient noise.

7 REFERENCES

- Noise Assessment of Wind Turbine Operations at EPA Licenced Sites (NG3), EPA Ireland, June 2011.
- Janssen Biologics (Ireland) Wind Energy Project Environmental Impact Statement, Arup, April 2011.
- ISO 9613-2.Acoustics—Attenuation of sound during propagation outdoors – International Standards Organisation 1996.
- Janssen Biologics IPPC Licence (P0778-01).
- Janssen Biologics IPPC Licence (Annual Noise Reports 2010 to 2013).
- Estimated Sound Power Level of the ENERCON E-101 Operational Mode I (Data Sheet), Enercon, October 2011.
- Report on Noise Levels No 213121-02.01, Kötter Consulting Engineers, 29/04/2013

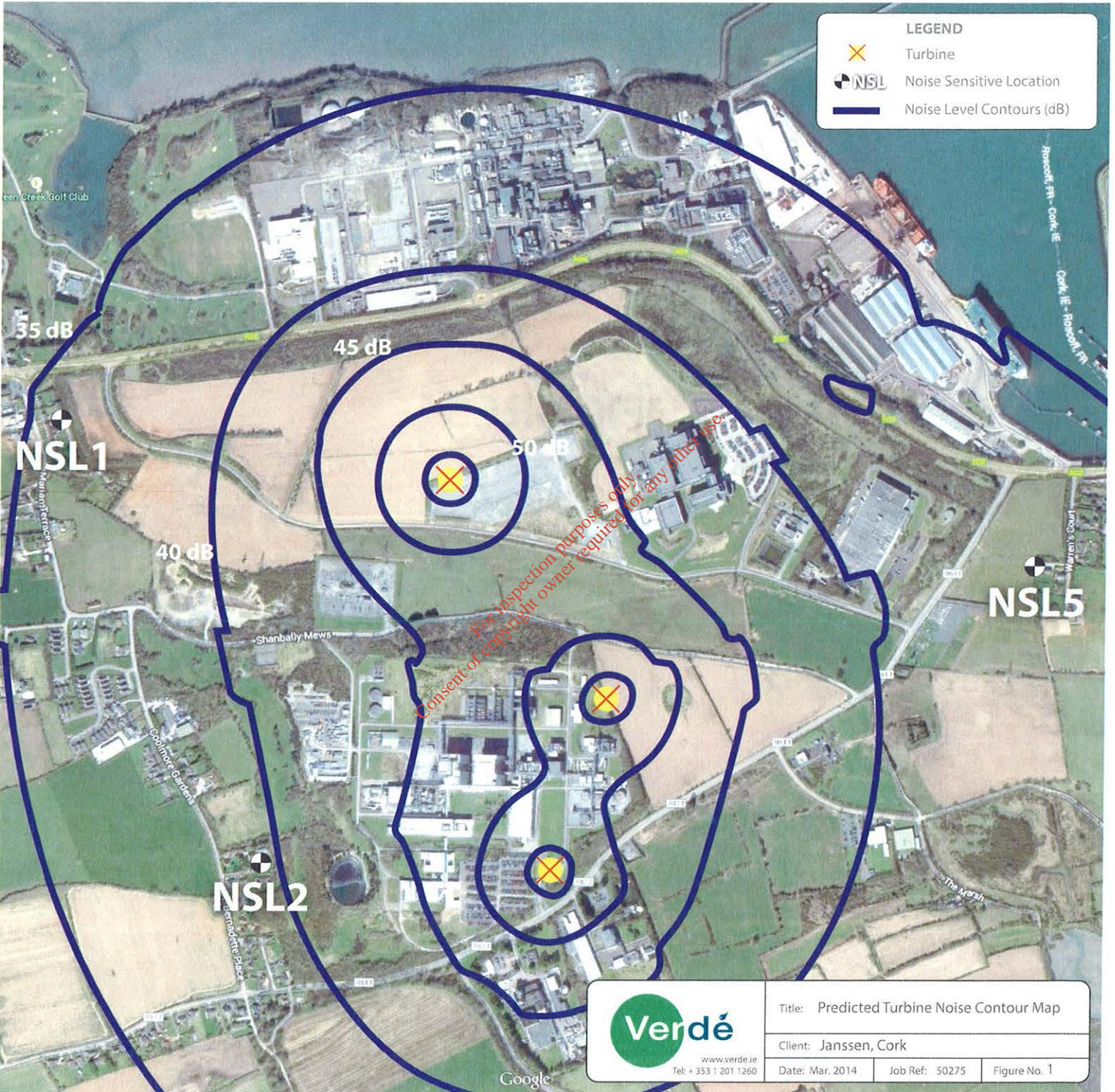
For inspection purposes only.
Consent of copyright owner required for any other use.



FIGURES

*For inspection purposes only.
Consent of copyright owner required for any other use.*

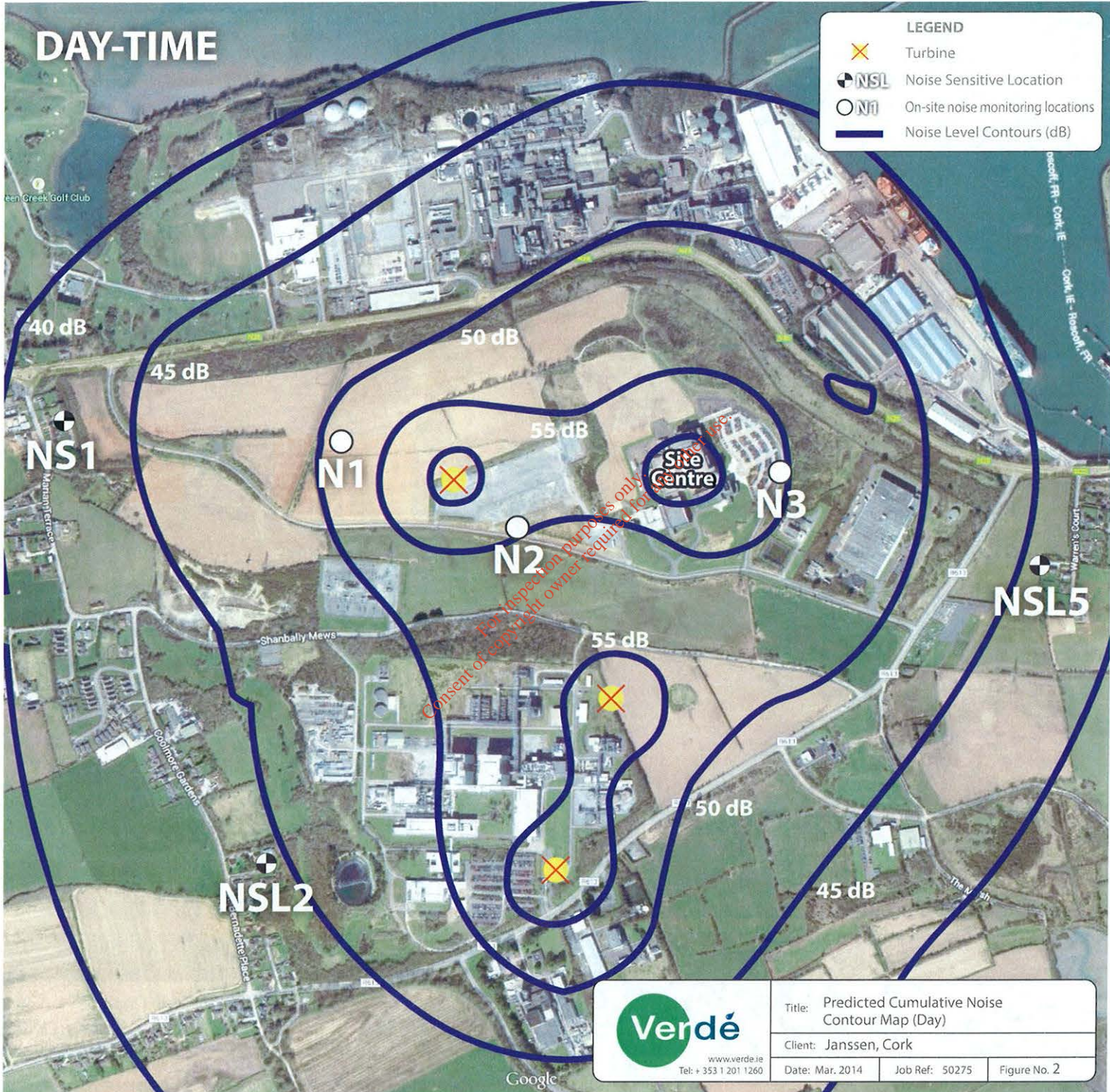





DAY-TIME

LEGEND





-  Turbine
-  Noise Sensitive Location
-  On-site noise monitoring locations
-  Noise Level Contours (dB)

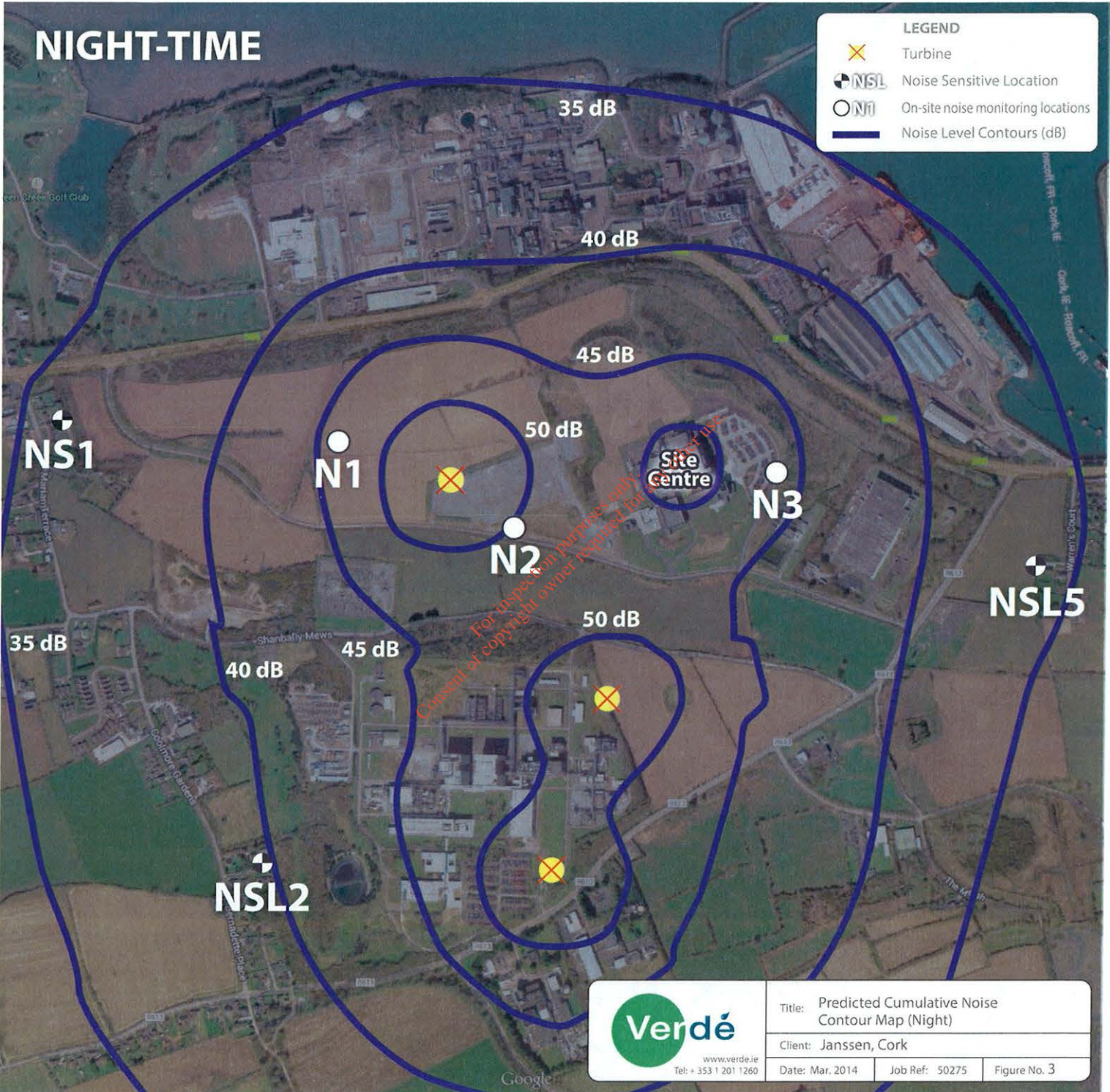



 <p>www.verde.ie Tel: + 353 1 201 1260</p>	Title: Predicted Cumulative Noise Contour Map (Day)		
	Client: Janssen, Cork		
Date: Mar. 2014	Job Ref: 50275	Figure No. 2	

NIGHT-TIME

LEGEND

-  Turbine
-  Noise Sensitive Location
-  On-site noise monitoring locations
-  Noise Level Contours (dB)



 <p>www.verde.ie Tel: + 353 1 201 1260</p>	Title: Predicted Cumulative Noise Contour Map (Night)		
	Client: Janssen, Cork		
Date: Mar. 2014	Job Ref: 50275	Figure No. 3	



APPENDIX 1

EIS Non-Technical Summary

For inspection purposes only.
Consent of copyright owner required for any other use.



Verde Environmental Consultants Ltd.

Part of the verde Environmental Group

Appendix 13.4 Country Houses (within the study area)

Non-Technical Summary

INTRODUCTION

Janssen Biologics (Ireland) intends to construct a new wind turbine with an output of up to three megawatts and associated infrastructure on the site of its existing biopharmaceutical manufacturing facility, at Barnahely, Ringaskiddy, County Cork.

The proposed development is one of a number of wind energy projects proposed by the Cork Lower Harbour Energy Group, of which Janssen Biologics (Ireland) is a member. The Group's renewable energy plan will comprise a total of six wind turbines installed throughout the area, with each turbine generating power for the site it is located on.

Janssen Biologics (Ireland) which is located in Ringaskiddy, County Cork, in close proximity to several major pharmaceutical API manufacturing facilities, is a wholly owned subsidiary of Johnson and Johnson.

Janssen Biologics (Ireland) operates under Environmental Protection Integrated Pollution Prevention Control Licence Register Number P0778-01.

ENVIRONMENTAL IMPACT STATEMENT

This Environmental Impact Statement has been prepared to provide information on potential environmental impacts of the proposed turbine, and to propose mitigation measures to reduce the residual impacts of the proposed development. The cumulative impacts arising from the proposed development in conjunction with the other Cork Lower Harbour Energy Group wind turbines at the Novartis, DePuy (Ireland) and GlaxoSmithKline (GSK) plants in the area is also assessed. The Environmental Impact Statement will be submitted with the planning application for the proposed development. The Environmental Impact Statement has been prepared in accordance with the relevant provisions set out in the Planning and Development Regulations 2001. Due regard has been given to guidelines and advice notes for the preparation of environmental impact statements published by the Environmental Protection Agency. The Environmental Impact Statement was also prepared with due regard to the 2006 Department of the Environment, Heritage and Local Government guidelines *Wind Farm Planning Guidelines*, and with the 2008 Irish Wind Energy Association and Sustainable Energy Ireland guidelines *Best Practice Guidelines for Windfarms*.

NEED FOR THE SCHEME

The proposed wind turbine will result in both financial and environmental improvements. It will reduce the cost of the operations at the Janssen Biologics (Ireland) facility in Ringaskiddy, making it more cost efficient and helping Centocor to sustain operations in the Cork area. Janssen Biologics (Ireland)'s dependence on energy generated by the combustion of fossil fuels will be reduced as a result of the proposed turbine, and the project will also result in reduced carbon dioxide emissions. The Irish Government's contribution to the

achievement of EU targets on climate and energy includes reducing emissions of greenhouse gases, increasing the use of renewable energy and improving energy efficiency. The proposed development will contribute to helping Ireland in meeting these targets.

ALTERNATIVES CONSIDERED

Janssen Biologics (Ireland) continuously strives to reduce its energy needs and become more energy efficient. An energy reduction programme is in place and an energy team monitors the performance of energy goals. A number of energy saving initiatives has been installed at the Ringaskiddy facility, including a biomass boiler in 2008 which has reduced the carbon dioxide emissions from the facility. In addition, the use of combined heat and power at the facility was considered, however it was considered that the overall impact on site energy needs would not be enough to justify the capital outlay. The proposed wind energy project represents the best payback and value for money option for Janssen Biologics (Ireland), in terms of reducing site electricity costs.

Alternative locations outside the boundary of the Janssen Biologics (Ireland) site were not considered for the location of the proposed wind turbine, as these are precluded by the current power regulatory framework.

During the selection process for the optimal location of the proposed wind turbine within the Janssen Biologics (Ireland) site, the optimisation of wind energy opportunities on the site was taken into consideration within environmental, planning, engineering, health and safety, future development and commercial constraints. Proposed locations for the wind turbine were reviewed in the context of these constraints and several iterations of the turbine layout were completed. The turbine location identified is based on an optimised technical, economic and environmental layout. Unforeseen ground conditions may require minor movements (micro-siting) of the position of the turbine. Any alteration to the location of the proposed works would be agreed with Cork County Council, prior to commencement of construction.

SITE AND SCHEME DESCRIPTION

The Janssen Biologics (Ireland) facility is located on a prominent hill, approximately one kilometre west of the village of Ringaskiddy. The Janssen Biologics (Ireland) buildings are located at the eastern end of the site area. The overall site is approximately 39 hectares in extent, with 12 hectares of these currently being used for the Janssen Biologics (Ireland) facility. Cork Harbour is approximately three kilometres east of the site. The Ringaskiddy area, in general is industrial in nature and there are a number of other large industrial sites in the area.

The main features of the proposed development include a new wind turbine with a capacity of up to three megawatts, an associated transformer, buried electrical and fibre-optic cabling, and a crane pad. The transformer will be housed within or adjacent to the turbine. The turbine will have a hub height of up to 100 metres with a rotor radius of approximately 50.5 metres. It will be of a typical modern design incorporating a tubular tower and three blades attached to a nacelle

housing the generator, gearbox and other operating equipment. The colour of the proposed turbine will be a semi-matt pale grey. The turbine foundation will comprise a reinforced concrete pad. An area of hardstanding (crane pad) will be required adjacent to the turbine foundation, to provide a stable base on which to lay down turbine components ready for assembly and erection and to site the two cranes necessary to lift the tower sections, nacelle and rotor into place. The crane pad will remain in situ following construction, in order to facilitate any future maintenance operations which may require cranes. Underground cables will link the turbine to the Janssen Biologics (Ireland) facility. In addition to generating electrical power for the Janssen Biologics (Ireland) facility, electricity will also be exported, from time to time to the national electrical grid via underground cabling.

The turbine is projected to have an operating lifetime of 25 years. The wind turbine operations will be controlled from the Janssen Biologics (Ireland) facility and will be operated and maintained in accordance with the relevant Health and Safety regulations.

The turbine will operate at all times when wind speeds are suitable, with the exception of downtime for maintenance.

CONSTRUCTION ACTIVITIES

The duration of the construction period for the wind project is expected to be six months. It is anticipated that up to 20 construction workers will be employed on site at any one time. The main elements of the construction process will comprise site preparation, excavation for and construction of turbine foundation, excavation of trenches and laying of underground cables, movement onto site and erection of wind turbine, connection to on-site distribution and signal cables, connection to existing ESB Networks system and commissioning of site equipment. A temporary construction compound will be required. This will be located within the Janssen Biologics (Ireland) facility. A crane hard standing will be constructed and will be located adjacent to the turbine base. Access to the site for construction vehicles delivering turbine components will be from the N28 via an existing access point.

Construction traffic will comprise heavy goods vehicles, workforce traffic and general site traffic. Mobile crane parts, including ballast, will be used to erect the turbines and will be delivered and removed by heavy goods vehicles. Abnormal load vehicles will be required for the delivery of the wind turbine components. For road safety reasons there may be a requirement for temporary local road closures during transportation of abnormal loads to the site (e.g. the turbine rotors). Road closures, if required, will be of temporary and of short duration. The construction phase will involve approximately 1000 Heavy Goods Vehicle trips over a 6 month period. This will equate to an average of 6 Heavy Goods Vehicles trips per day, with a peak of between 30 and 40 trips per day during certain construction activities i.e. delivery of ready mix concrete. Construction staff will generate a peak of approximately 60 car/light goods vehicle trips per day. A construction management plan will be implemented and will include management of construction traffic. The impact of construction traffic on the local road network will be very slight.

Every reasonable effort will be made to ensure that any detrimental environmental effects will be minimised during the construction phase of the project. A

construction environmental management plan will be prepared and implemented with the objective of keeping disruption and nuisance to a minimum. The employment of good construction management practices will minimise the risk of pollution of soil, storm water run-off or groundwater. Waste generated during the construction phase will be carefully managed according to accepted waste hierarchy which gives precedence to prevention, minimisation, reuse and recycling over disposal, with energy recovery and finally disposal to landfill. It is anticipated that 50 per cent of soil excavated for the turbine foundation may be reused to backfill over the lower turbine pad. The remaining subsoil will be transported offsite for appropriate reuse, or disposal at an appropriate facility.

The cumulative impacts of simultaneous construction of all four Lower Harbour Energy Group sites will be very slight. Impacts will be short term and of a temporary nature.

It is anticipated that, with proper management, the construction phase of the development will not have significant or long-term cumulative negative impacts.

PLANNING AND POLICY CONTEXT

Both international, national and local development policy support the appropriate development of wind energy. In particular, in December 2010, Cork County Council amended the Development Plan (Variation Number 2 of the Plan) to facilitate the appropriate future development of wind energy projects in locations such as Ringaskiddy, in accordance with the Planning and Development Acts. With the incorporation of Variation No. 2 to the Plan, the Plan's general policy of support for wind energy now applies to wind energy projects in Ringaskiddy, and subject to normal planning and sustainable development criteria, the project is in compliance with this policy.

HUMAN BEINGS

Employment will be directly provided for approximately 20 workers during the construction of the wind turbine. There will also be associated secondary employment and economic activity associated with the construction of the proposed development.

The increase in traffic, generated by the construction of the wind turbine will not be significant. Refer to the **Construction Activities** section.

No significant flicker effects are predicted arising from the operation of the turbine.

It is envisaged there will be no recreational amenity impacts as a result of the proposed wind turbine.

There will be no significant impact on land use, property values, agriculture or tourism as a result of the proposed development.

The potential noise, air and visual impacts are described in the relevant above sections.

Overall, other than visual impacts from a number of viewpoints (refer to above Landscape and Visual section) there will be no significant, long term, adverse cumulative impacts on human beings as a result of the construction and operation of all of the six Lower Harbour Energy Group wind turbines.

FLORA AND FAUNA

The impacts of the proposed Janssen Biologics (Ireland) wind turbine on flora and fauna, and also the cumulative impacts of the development of six turbines in the wider area on flora and fauna are assessed.

The site of the proposed wind turbine is not covered by any nature conservation designation. Five designated areas for nature conservation occur within 5km of the site of the proposed development, four of which are proposed Natural Heritage Areas. Monkstown Creek which is within the Cork Harbour Special Protection Area is located less than 1km north of the site. Monkstown Creek is also designated as a proposed Natural Heritage Area. Due to the proximity of the proposed turbine to the Special Protection Area, an Appropriate Assessment was completed to assess the potential for the proposed development to impact negatively on the integrity of this Natura 2000 site.

Mitigation measures have been incorporated into the project design, to avoid areas of particular sensitivity for rare and protected species by excluding or relocating turbines. In addition, best practice will be implemented during all construction activities to prevent potential impacts to surface waters.

The principal residual impacts of the proposed Janssen Biologics (Ireland) development will be a slight, local risk of collision with the turbine during operation for bats and some more vulnerable species of non-breeding birds.

With regard to cumulative impacts of the construction and operation of all six Cork Lower Harbour Energy wind turbines on flora and fauna, there will be no significant cumulative impacts on designated areas of conservation or on flora and fauna.

Under the 2008 EUROBATS guidelines it is recommended that monitoring of bat populations is conducted for three years once the wind turbine becomes operational. Monitoring results from all operational turbines within nearby sites should be assessed cumulatively.

Following construction, bird populations within 600 metres of the turbine, should be monitored on a periodical basis over three years, by a competent ornithologist to determine if any effects of displacement disturbance can be detected. In addition, regular searches for bird casualties will be undertaken within a radius of 140 metres of the turbine to monitor the actual number of collisions.

LANDSCAPE AND VISUAL

The proposed development was assessed with regard to its visual impact, the extent to which it will be seen, and its impact on the existing landscape character. The cumulative landscape and visual impacts arising from the proposed

development in conjunction with the other wind turbines at the Novartis, DePuy (Ireland) and GlaxoSmithKline plants in the area are also assessed.

Once installed, the physical scale and movement of the turbine will give rise to significant change in the immediate landscape however the turbine has been located to minimise visual and other environmental impacts. In addition, the turbine will be painted in an off-white or grey colour with a matt finish to help it blend in effectively with typical Irish skies. Night lighting, for aviation safety, will comprise a small warning light at the top of the nacelle or turbine hub.

In general, construction impacts will be temporary, negative and localised in nature.

During the operational stage, landscape and visual impacts will mainly arise from the physical built presence of the turbine and the movement of the blades. The wind turbine will be visible over a wide area of the surrounding landscape and lower harbour. The impacts of the Janssen Biologics (Ireland) turbine on views will range from imperceptible, through slight and moderate, to significant, depending on the viewpoint, distance and intervening topography. During operation, the proposed Janssen Biologics (Ireland) turbine will impart a slight to moderate change to the lower harbour landscape character area.

The cumulative impacts, of all six turbines operating together, on views will range from imperceptible, through slight to moderate, to significant. The 6 wind turbines, when operating together, will impart a moderate cumulative change in the harbour landscape character area.

The impact of the wind turbine within the landscape will very much depend on by whom and how it is experienced.

NOISE AND VIBRATION

The environmental noise and vibration impact assessment of the construction and operation of the proposed wind turbine at Janssen Biologics (Ireland) was undertaken by ANV Technology. The assessment is in accordance with criteria outlined in the 2006 Department of Environment Heritage and Local Government *Wind Farm Planning Guidelines*.

Account is also taken of cumulative industrial plus wind turbine noise limits. Compliance with guideline noise limits is assessed based on the cumulative wind turbine noise levels, assuming that all six Cork Lower Harbour Energy Group wind turbines are installed.

Noise propagation modelling was undertaken as part of the noise impact assessment. The final wind turbine model has not yet been selected, however, the noise assessment used data for the Enercon E-101, which is indicative of the turbine type being considered for the site.

The noise impact of the construction phase of the proposed wind turbine on the nearest houses will be negligible.

For a wind turbine with characteristics similar to the Enercon E-101, the highest predicted noise levels as a result of the operation of proposed Centocor turbine and

also the cumulative wind turbine noise levels are expected to be comfortably within the Department of Environment Heritage and Local Government limit values.

In terms of audible wind turbine noise, the noise impact at the residential noise sensitive locations will be negligible.

EPA guidelines on the assessment of wind turbine noise at Integrated Pollution Prevention Control licensed sites were in draft form at the time of preparation of this Environmental Impact Statement, however it is likely that the Environmental Protection Agency will require the cumulative industrial plus wind turbine noise to be within the standard Environmental Protection Agency noise limits, at the noise sensitive receptors.

The analysis indicates that the cumulative noise levels will be comfortably within this limit at the nearest residential noise sensitive locations.

At this planning stage, the most effective mitigation measure within the control of Centocor is selection of wind turbines with the lowest sound power emissions.

Regarding noise conditions which may be imposed by the EPA, it is considered that the Centocor wind turbine will be able to operate within standard fixed limits, and will not have to apply for special limits relative to background noise.

AIR QUALITY AND CLIMATE

There will be minor emissions to the atmosphere during the construction phase. Containment and dust suppression techniques during construction will be sufficient to ensure that any off site impacts are negligible. Therefore, it is not envisaged that the turbine will have any significant adverse impacts on ambient air quality or climate.

During operation, long-term beneficial impacts are predicted relating both to global air quality and climate.

SOILS, GEOLOGY, SURFACE WATER AND GROUNDWATER

The bedrock of the site of the proposed development is recorded as being of the Cuskinny member of the Kinsale Formation, generally described as a mud dominant succession laid down in early Carboniferous times. The Cuskinny Member is distinguished from the other members of the Kinsale Formation by the higher proportion of sandstone and sand-dominant layers. The upper one to two metres of bedrock at the site is very highly weathered. The soils at the location of the proposed wind turbine are expected to be topsoil underlain by a stiff to very stiff silt sandy gravelly clay. There are no sites of geological interest within the Janssen Biologics (Ireland) site.

There are no watercourses or drainage ditches within or adjacent to the site of the proposed wind turbine. The site lies on the Ringaskiddy Peninsula in the lower part of Cork Harbour, and is located to the south of Monkstown Creek.

Groundwater at the site flows in a south easterly direction, veering to a southerly direction along the southern boundary of the site.

Excavation of the foundation of the turbine will involve excavation of approximately 1300 cubic metres of spoil, of which 50 per cent may be reused to backfill over the lower pad. The remaining subsoil may be transported offsite for appropriate reuse, or disposal at a licensed facility.

The employment of good construction management practices will minimise the risk of pollution of soil, storm water run-off or groundwater. The removal of excavated soil from the site, if required, will be long term and irreversible, but not significant. It is considered that overall there will be no significant impacts on soils, geology, surface water and groundwater as a result of the construction and operation of the proposed development.

There will be no significant cumulative impacts on soils, geology, surface water and groundwater as a result of the construction and operation of all of the six Lower Harbour Energy Group wind turbines.

MATERIAL ASSETS

Existing material assets associated with the site of the proposed development are assessed, projections of resource use are made for the construction and operation of the proposed development, and the impact assessed.

The Irish Aviation Authority (IAA) has been consulted in relation to the proposed scheme. They identified the potential for effects on their radar installation at Tulligmore Hill, south of Cork Airport. In response to these concerns, an Aviation Impact Assessment was completed. The IAA is currently commissioning a radar installation which is similar to that at Tulligmore Hill. This new radar installation is located near Shannon Airport, and it will incorporate mitigation measures similar to those proposed in the Aviation Impact Assessment for this project. The IAA has advised that the outcome of this commissioning will help to inform their assessment of the proposed development.

The proposed wind turbine will be in keeping with Cork County Council zoning for the site. It is considered that the proposed development will have an overall neutral impact on local settlement and undeveloped land resource. It is anticipated that property values in the Ringaskiddy area will not be affected as a result of the construction or operation of the proposed development.

There will be no significant impact on the road infrastructure and traffic as a result of the construction phase of the proposed wind turbine.

The operation of the wind turbine will reduce the consumption of mains electricity on the Centocor site. At certain stages, surplus power will also be exported to the national electricity grid. No significant impact on existing power infrastructure is envisaged.

There will not be a significant impact on the Cork County Council water supply, as a result of the construction of the proposed development.

There are no known mineral resources located within the site boundary.

Overall, it is anticipated that there will be no significant, cumulative adverse impacts on material assets as a result of construction and operation of all of the six Lower Harbour Energy Group wind turbines.

ARCHAEOLOGY, ARCHITECTURAL AND CULTURAL HERITAGE

There are no recorded archaeological sites within the site of the proposed wind turbine development. There are forty seven recorded archaeological sites within 2 kilometres of the site, and which are listed in the Record of Monuments and Places. No features of archaeological/architectural/cultural heritage interest were noted during site inspection.

The proposed development will not impact directly on any recorded archaeological site or on any architectural heritage.

The turbine will have a visual impact on a ringfort in Barnahely, where the turbine will be visible in the background of certain views of the ringfort. There will be less significant visual impacts on a graveyard, church and fortified house at Barnahely.

The construction of the proposed development will involve ground disturbance. However, as the entire area has been previously disturbed, no mitigation is necessary. It is always possible that stray finds may be present in material being disturbed on the site. In the event of archaeological material being uncovered such material will be fully resolved to professional standards of archaeological practice (Policy Guidelines on Archaeological Excavation – Department of Arts, Heritage, Gaeltacht and the Islands). The developer is aware of the National Monuments Legislation (1930-1994) which states that in the event of the discovery of archaeological finds or remains, the Department of the Environment, Heritage and Local Government should be notified immediately and that any subsequent investigation should be facilitated and funded by the developer.

CUMULATIVE IMPACTS, OTHER IMPACTS AND INTERACTIONS

The Janssen Biologics (Ireland) wind energy project has been assessed in the context of other planned wind energy projects which are proposed for the Lower Harbour area. For each environmental topic, the cumulative impacts of all of the Cork Lower Harbour Energy Group projects have been assessed, to ensure that all potential significant impacts and interactions are identified.

VIEWING AND PURCHASING THE ENVIRONMENTAL IMPACT STATEMENT

The full Environmental Impact Statement, of which this is a non-technical summary, can be viewed and purchased at the offices of the Planning Department, Cork County Council, County Hall, Carrigrohane Road, Cork.



APPENDIX 2

Completed NG3 Turbine Noise Modelling Template

*For inspection purposes only.
Consent of copyright owner required for any other use.*





APPENDIX 2: TURBINE NOISE MODELLING TEMPLATE

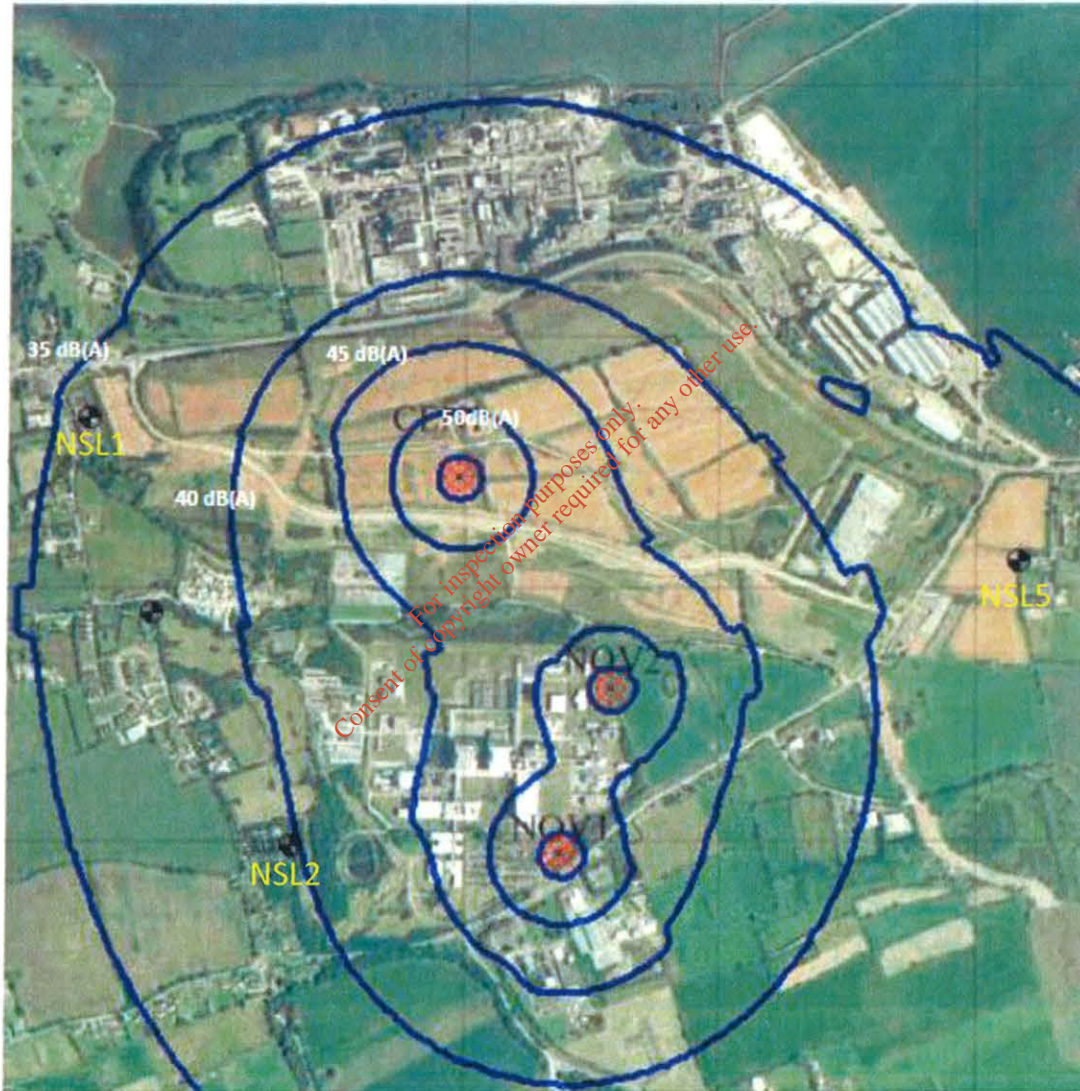
Prediction Methodology	
Modelling Standard	ISO 9613 <input checked="" type="checkbox"/> Other <input type="checkbox"/> Explanation for use <u>Standard Recommended Method</u> _____
Software Title (if specific software used)	WindPRO version 2.8
File Location	J:C2400-C2499\C2465

Modelling Parameters	
Ground Factor (Source, Receiver and Middle Regions)	0.5
Meteorological Correction	No correction
Temperature (°C)	20
Relative Humidity (%)	70

Model Inputs								
Turbine Type	Enercon E-101							
Source (Append data where possible)	Turbine Cen 1 (Same data applies for other proposed turbines)							
Sound Power Data	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Wind Speed <u>6m/s</u> standardised to 10 m ht.	85.6	91.9	97.2	99.6	96.7	91.5	84.6	70.3
Wind Speed <u>7m/s</u> standardised to 10 m ht.	87.3	91.5	98.4	100.3	97.1	91.9	85	71.5
Wind Speed <u>8m/s</u> standardised to 10 m ht.	86.3	91.6	98.6	100.8	98.3	92.8	86	73.3
Wind Speed <u>9m/s</u> standardised to 10 m ht.	86	90.8	97.6	100.6	98.8	93.5	86.4	74.2
Wind Speed <u>10m/s</u> * standardised to 10 m ht.	87	92	99	102	100	95	88	75

* These values are estimated based on a maximum reported sound power level of 106dB

Receivers (add additional receivers where required)	Reference	Grid Reference (6 digit E, 6 digit N)	Receiver Heights
	NSL1	175760, 64340	4m
	NSL2	175890, 63950	4m
	NSL5	177590, 64055	4m
Screenshot	Shows modelled turbine noise at 10m/s (Sound Power Level of 106dB) from Janssen site (CEN1) and proposed two turbines in Novartis site (NOV 1 & 2)		





Model set up by Model set up and finalised by Arup 29/04/2011
 Data reviewed and updated by Verde 04/03/2014

Reviewed by CYRIL TYNAN Name (Block Letters)
 Senior EHS Consultant (Verde) Position

Cyril Tynan

Signed

Reporting							
Predicted Turbine Noise	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
Receiver_NSL1_, dB LAeq	33	35	36	36	36	36	36
Receiver_NSL2_, dB LAeq	35	37	38	38	38	38	38
Receiver_NSL5_, dB LAeq	33	35	36	36	36	36	36

Results confirmed by	CYRIL TYNAN Senior EHS Consultant (Verde)	Name (Block Letters) Position Signed
----------------------	--	--

Cyril Tynan

For inspection purposes only. Consent of copyright owner required for any other use.



APPENDIX 3

Completed NG3 Assessment Results Template

*For inspection purposes only.
Consent of copyright owner required for any other use.*





APPENDIX 3: ASSESSMENT RESULTS TEMPLATE WITHOUT BACKGROUND NOISE

Step 1 : Predicted Turbine Noise Level (from Appendix 2)							
Predicted Turbine Noise	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
Receiver _NSL1_, dB LAeq	33	35	36	36	36	36	36
Receiver _NSL2_, dB LAeq	35	37	38	38	38	38	38
Receiver _NSL5_, dB LAeq	33	35	36	36	36	36	36

Step 2 : Cumulative Site Noise Level		
	Daytime Site Noise Rated Level, dB LA _r	Night-time Site Noise Level, dB LA _{eq}
Receiver – NSL1	42	33
Receiver – NSL2	43	35
Receiver – NSL5	44	39

Step 3 : Predicted Cumulative Noise Level Compliance Assessment								
Highlight noise levels which are not compliant with the limits shown								
Receiver- NSL1	Limit	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
Daytime cumulative noise level, dB LA _r	55	43	43	43	43	43	43	43
Night-time cumulative noise level, dB LA _{eq}	45	36	37	38	38	38	38	38
Predicted Turbine Noise, dB LA _{eq}	45	33	35	36	36	36	36	36
Receiver- NSL2	Limit	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
Daytime cumulative noise level, dB LA _r	55	44	44	44	44	44	44	44
Night-time cumulative noise level, dB LA _{eq}	45	38	39	40	40	40	40	40
Predicted Turbine Noise, dB LA _{eq}	45	35	37	38	38	38	38	38
Receiver- NSL5	Limit	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
Daytime cumulative noise level, dB LA _r	55	44	45	45	45	45	45	45
Night-time cumulative noise level, dB LA _{eq}	45	40	40	41	41	41	41	41
Predicted Turbine Noise, dB LA _{eq}	45	33	35	36	36	36	36	36

Reported by

CYRIL TYNAN
Senior EHS Consultant (Verde)

Name (Block Letters)
Position

Signed



APPENDIX 4

Enercon E101 – Sound Power Levels Data Sheet

For inspection purposes only.
Consent of copyright owner required for any other use.



Summary of Test Report (Measured hub height of 99 m) /1/ Master Data Sheet "Geräusche" (Noise), in accordance with "Technische Richtlinien für Windenergieanlagen, Teil 1: Bestimmung der Schallemissionswerte" (Technical Guidelines for Wind Turbine Generators, Part 1: Determination of sound emission values) <small>Rev. 18 of February 1, 2008 (Editor: Fördergesellschaft Windenergie e.V. Stresemannplatz 4, D-24103 Kiel)</small>												
Extract of Test Report 213122-02.01 IEC on noise emission of wind turbine generator of type E-101												
General Data		Technical Data (manufacturer's specifications)										
Manufacturer of WTG:	Enercon GmbH	Rated power (generator):	3,050 (3,250) kW									
Serial number:	1010002	Diameter of rotor:	101 m									
Location of WTG (approx.):	49733 Haren	Hub height above ground:	99 m									
Geographic co-ordinates:	GK longitude: 25.76.214 GK latitude: 58.59.856	Type of tower:	conical tubular concrete									
		Power control:	Pitch									
Complementary rotor data (manufacturer's specifications)		Complementary data of gear unit and generator (manufacturer's specifications)										
Manufacturer of rotor blade:	Enercon	Manufacturer of gear unit:	not applicable									
Type of rotor blade:	E-101-1	Type of gear unit:	not applicable									
Blade setting angle:	variable	Manufacturer of generator:	Enercon									
Number of rotor blades:	3	Type of generator:	G-101/30-G2									
Rotor speed range:	5 to 14.7 rpm. (mode OM I)	Rated speed of generator:	5 to 14.7 rpm. (mode OM I)									
Calculated Performance Chart: Performance characteristic E 101 3 MW OM I ; calculated by ENERCON (Rev. 1.0)												
	Reference Point		Noise emission parameters	Observations								
	standardized wind speed at a height of 10 m	true electrical power										
sound power level $L_{WA,P}$	6 ms^{-1}	1,414 kW	103.6 dB(A)									
	7 ms^{-1}	2,077 kW	104.3 dB(A)									
	8 ms^{-1}	2,751 kW	104.8 dB(A)									
	9 ms^{-1}	2,987 kW	104.6 dB(A)	(1)								
	10 ms^{-1}	3,050 kW	--	(2)								
tonal audibility $\Delta L_{a,k}$	6 ms^{-1}	1,414 kW	- 1.5 dB									
	7 ms^{-1}	2,077 kW	0 dB									
	8 ms^{-1}	2,751 kW	0 dB									
	9 ms^{-1}	2,987 kW	0 dB	(1)								
	10 ms^{-1}	3,050 kW	--	(2)								
impulse adjustment for immediate vicinity K_{IN}	6 ms^{-1}	1,414 kW	0 dB									
	7 ms^{-1}	2,077 kW	0 dB									
	8 ms^{-1}	2,751 kW	0 dB									
	9 ms^{-1}	2,987 kW	0 dB	(1)								
	10 ms^{-1}	3,050 kW	--	(2)								
Third-octave band sound power level for $v_s = 6 \text{ ms}^{-1}$ in dB(A)												
Frequency	50	63	80	100	125	160	200	250	315	400	500	630
$L_{WA,P}$	78.3	81.8*	83.0**	84.2	89.6	85.7*	89.2	92.7	94.1	94.6	95.1	94.9
Frequency	800	1,000	1,250	1,600	2,000	2,500	3,150	4,000	5,000	6,300	8,000	10,000
$L_{WA,P}$	93.5	91.6	90.0	89.0	85.4	84.1	82.3	79.3	74.8	67.8*	64.7**	65.3**
Octave band sound power level for $v_s = 6 \text{ ms}^{-1}$ in dB(A)												
Frequency	63	125	250	500	1,000	2,000	4,000	8,000				
$L_{WA,P}$	85.6*	91.9	97.2	99.6	96.7	91.5	84.6	70.3*				
Third-octave band sound power level for $v_s = 7 \text{ ms}^{-1}$ in dB(A)												
Frequency	50	63	80	100	125	160	200	250	315	400	500	630
$L_{WA,P}$	78.9	83.3	84.0	84.9	88.2	86.4*	89.6	94.7	94.9	95.4	95.8	95.5
Frequency	800	1,000	1,250	1,600	2,000	2,500	3,150	4,000	5,000	6,300	8,000	10,000
$L_{WA,P}$	94.0	92.0	90.4	89.3	86.1	84.7	82.9	79.9	74.4*	68.4*	64.6**	62.7**
Octave band sound power level for $v_s = 7 \text{ ms}^{-1}$ in dB(A)												
Frequency	63	125	250	500	1,000	2,000	4,000	8,000				
$L_{WA,P}$	87.3	91.5	98.4	100.3	97.1	91.9	85.0	71.5**				

Third-octave band sound power level for $v_s = 8 \text{ ms}^{-1}$ in dB(A)												
Frequency	50	63	80	100	125	160	200	250	315	400	500	630
L _{W,A,P}	82.1	82.8	84.4	88.4	86.8	90.1	94.8	95.0	95.6	96.3	96.2	82.1
Frequency	800	1,000	1,250	1,600	2,000	2,500	3,150	4,000	5,000	6,300	8,000	10,000
L _{W,A,P}	95.0	93.3	91.5	90.4	86.7	85.4	83.7	80.9	75.9	69.7*	67.1**	65.5**
Octave band sound power level for $v_s = 8 \text{ ms}^{-1}$ in dB(A)												
Frequency	63	125	250	500	1,000	2,000	4,000	8,000				
L _{W,A,P}	86.3	91.6	98.6	100.8	98.3	92.8	86.0	73.3**				
Third-octave band sound power level for $v_s = 9 \text{ ms}^{-1}$ in dB(A)												
Frequency	50	63	80	100	125	160	200	250	315	400	500	630
L _{W,A,P}	78.6	81.9	82.4*	83.9	87.8	85.9*	88.6	93.8	94.2	95.1	96.0	96.3
Frequency	800	1,000	1,250	1,600	2,000	2,500	3,150	4,000	5,000	6,300	8,000	10,000
L _{W,A,P}	95.4	93.8	92.3	91.0	87.4	86.0	84.1	81.1	76.7	71.7	68.4	66.8*
Octave band sound power level for $v_s = 9 \text{ ms}^{-1}$ in dB(A)												
Frequency	63	125	250	500	1,000	2,000	4,000	8,000				
L _{W,A,P}	86.0	90.8	97.6	100.6	98.8	93.5	86.4	74.2				

This summary of the test report is valid only in combination with the manufacturer's certificate dated 12/03/2013.

These specifications do not replace the test report mentioned above (particularly for noise immission predictions).

- Observations:
- (1) Maximum value of standardized wind speed during the WTG-operation measurement $v_s = 8,9 \text{ m/s}$
 - (2) Due to weather conditions, no data available during WTG operation
- * Difference between working and background noise < 6 dB, correction by 1.3 dB
- ** Difference between working and background noise < 3 dB, values shall not be presented

/1/ Wind turbine generator systems – Part 11: Acoustic noise; measurement techniques (IEC 61400-11:2002 and A1:2006); German version DIN EN 61400-11:2007

Measured by: KÖTTER Consulting Engineers
- Rheine -

Dipl.-Ing. Oliver Bunk

Matthias Humpohl, B.Sc.



APPENDIX 5

Enercon Sound Power Level Warranty

For inspection purposes only.
Consent of copyright owner required for any other use.



Sound Power Level Warranty

for

ENERCON

Wind Energy Converters

*For inspection purposes only.
Consent of copyright owner required for any other use.*

Imprint

Editor: ENERCON GmbH • Dreekamp 5 • 26605 Aurich • Germany

Telephone: 04941-927-0

Fax: 04941-927-109

Copyright: Unless otherwise specified in this document, the contents of this document are protected by copyright of ENERCON GmbH. All rights reserved. No use, including any copying or publishing, of this information is permitted without the prior written consent of ENERCON GmbH.

Updates: ENERCON GmbH reserves the right to continuously update and modify this document and the items described therein at any time without prior notice.

Revision

Revision: 006.0 (02'2011)

Department: ENERCON GmbH / Site Assessment

1 Definitions

Unless otherwise defined hereinafter, the terms and expressions used in this document shall have the meaning as defined in the Contract. In addition and in deviation to the Contract (if any), the words and expressions defined hereinafter shall have the meaning assigned to them in the following:

- 1.1.1 **"Clause"** means a clause or provision of this warranty.
- 1.1.2 **"Compensation"** has the meaning ascribed to it in Clause 4 below.
- 1.1.3 **"Contract"** means the underlying ENERCON Partner Konzept Agreement.
- 1.1.4 **"Measured Sound Power Level"** or **"Measured SPL"** means the sound power level of the WEC as measured and determined by the Measurement Expert during the Measurement on the basis of the Measurement Standards.
- 1.1.5 **"Measurement"** means the process of verifying the Warranted SPL undertaken by the Measurement Expert in accordance with the Measurement Standards.
- 1.1.6 **"Measurement Expert"** means the consultant chosen and engaged by the Employer for undertaking the Measurement. The Measurement Expert shall either be officially accredited to perform sound power level measurements according to IEC 61400-11 or be able to provide evidence of having at least five (5) years of experience with such measurements.
- 1.1.7 **"Measurement Standards"** means the standards of measuring and verifying the Warranted SPL according to the standards of IEC 61400-11 (using Method 1 [*"determination of the wind speed from the power output and the power curve"*]) for the determination of the wind speed, as described in chapter 7.3.1.1 of such rules) and any modifications and addenda to such standards as jointly agreed by the Contractor, the Employer and the Measurement Expert.
- 1.1.8 **"Re-measured Sound Power Level"** or **"Re-measured SPL"** means the sound power level of the WEC as measured and determined during the Re-measurement.
- 1.1.9 **"Re-measurement"** means the measurement process undertaken by the Re-measurement Expert on the basis of the Measurement Standards.
- 1.1.10 **"Re-measurement Expert"** means an accredited consultant chosen and engaged by the Contractor for undertaking the Re-measurement. The Re-measurement Expert shall be either officially accredited to perform sound power level measurements according to IEC 61400-11 or be able to provide evidence of having at least five (5) years of experience with such measurements.
- 1.1.11 **"TSA"** means the "TSA" or "Delivery Contract" (whichever definition is used in the Contract).
- 1.1.12 **"Warranted Sound Power Level"** or **"Warranted SPL"** means the underlying sound power level of the WEC (as defined for the prototype of the relevant WEC and set out in the data sheet attached as an Annex to the Contract) with an additional margin of +1dB.
- 1.1.13 **"Warranty Term"** means the first two (2) Operational Years under the Contract.

2 Sound Power Level Warranty

Subject to the terms and conditions defined in Clause 5 below and for the period of the Warranty Term the Contractor warrants for each WEC that on the basis of the Measurement Standards the sound power level of each WEC does not exceed the Warranted SPL of such WEC.

3 Employer's option to measure

3.1 Employer's notification

- 3.1.1 If during the Warranty Term the Employer wishes to measure the sound power level of a WEC, he shall notify the Contractor thereof in writing. In the notification the Employer shall
- name the Measurement Expert who he wishes to engage for conducting the measurement and provide the Contractor with the full address and contact details (including telephone number and e-mail) of the Measurement Expert, and
 - define the earliest date on which the Measurement could be executed.
- 3.1.2 Within four (4) weeks after receipt of the Employer's notice the Contractor shall inform the Employer if, and during what period of time, the Contractor would have to examine the respective WEC before commencement of the Measurement (see Clause 3.2 below).
- 3.1.3 If the Measurement Expert recommends modifications or addenda to the Measurement Standards, the Parties shall jointly and unanimously agree on the Measurement Standards finally applied (which shall include the measurement equipment to be used).
- 3.1.4 Unless otherwise provided for in Clauses 3.3.5 or 3.4.4, the Employer shall bear the cost of the Measurement.

3.2 Examination of the WEC

- 3.2.1 Before commencement of the Measurement the Contractor shall be given opportunity to undertake appropriate action in order to avoid that certain parameter settings or technical implications in the relevant WEC could distort or corrupt the results of the Measurement.¹ The Employer acknowledges that such appropriate measures may include the Contractor entering upon the Site on several occasions and installing appropriate testing equipment for the purpose of conducting its own investigations at the Site. The Employer agrees to allow the Contractor access to the Site for such purpose, and the Employer shall cooperate with the Contractor in conducting such investigations.
- 3.2.2 If the Contractor decides to examine or calibrate the WEC prior to the Measurement according to this Clause 3.2, the period of time used by the Contractor for such purposes shall be recorded and be automatically considered an equal extension of

¹ As an example, the Contractor may have to re-check rotor blade angles, the WEC internal control software version, WEC settings in respect of power output reduction mode or the rotor blade surface (by remote visual inspection).

the Warranty Term provided that the Contractor exceeds a period of three months for undertaking such measures.²

3.3 Execution of the Measurement

- 3.3.1 On the date of the Measurement the Contractor's service personnel will accompany the Measurement Expert to the Site in order to arrange for the necessary installation of the "ENERCON customer interface" or the electrical power transducer of the Measurement Expert at the relevant WEC (whichever is the case).
- 3.3.2 The Measurement shall be undertaken by the Measurement Expert according to the Measurement Standards in the absence of adverse climatic conditions.³ The Measurement shall be documented and evaluated in a suitable report. (Upon request, the Contractor will provide the Employer with a template of a measurement report.)
- 3.3.3 If the final results of the Measurement (including supporting particulars) are not submitted to the Contractor in writing six (6) months prior to the expiry of the Warranty Term the Contractor shall have no further liability under this warranty.
- 3.3.4 If the Measurement reveals a Measured SPL that is equal to or better than the Warranted SPL, the Contractor shall not be required to take any further action.
- 3.3.5 If the Measurement reveals a Measured SPL that exceeds the Warranted SPL, the Contractor shall, at the latest within eight (8) weeks after having received the Measurement report and supporting particulars, evaluate the Measurement report, and the Contractor, acting reasonably, shall inform the Employer as to whether
- a) he rejects the Measurement if the Measurement report is incorrect, not complete or was not executed according to the Measurement Standards, or whether
 - b) he has decided to have the sound power level of the WEC measured again in a second verification process ("Re-measurement") in order to validate the results of the Measurement.
- 3.3.6 If the Contractor neither rejected the Measurement nor decided to undertake the Re-Measurement according to Clause 3.3.5, the Contractor shall accept the results of the Measurement and shall pay Compensation and cost to the Employer according to Clause 3.4.4. In this case, the Contractor may furthermore decide to take appropriate measures to re-examine and adjust the deficient WEC or to arrange, in consultation with the Employer, for the protection of any persons affected by the sound of the WEC (e.g. by installing adequate noise barriers at affected locations).

3.4 Execution of the Re-measurement

- 3.4.1 If the Contractor decides to have the Re-measurement executed, he shall inform the Employer at the latest within three (3) months after having received the results of the Measurement including all supporting particulars. The Re-Measurement shall then be executed by the Re-measurement Expert according to the Measurement Standards and as fast as possible (taking into consideration suitable weather conditions). The Employer shall reasonably co-operate with the Contractor to facilitate the proper execution of the Re-measurement and the installation of the necessary measurement

² A part of the examination on Site will depend on adequate wind conditions in order to notice any relevant sound emissions.

³ e.g. ice on the rotor blades or rain which creates background noise

instrumentation at the Site and, to the extent necessary, switch off the WEC and other WECs in the vicinity during the Re-measurement.

- 3.4.2 The Re-measurement shall be completed at the latest twelve (12) months after receipt by the Contractor of the results of the Measurement. If the Contractor has undertaken major modifications or repair works on the relevant WEC after completion of the Measurement, such time shall be added to the before mentioned period, and the Warranty Term shall be extended, accordingly.
- 3.4.3 The Employer shall receive a copy of the final Re-measurement report. If the Re-measurement reveals a Re-measured SPL which meets or is below the Warranted SPL, the Contractor shall have no further obligation under this warranty. In this case the Employer shall pay the Contractor the cost reasonably incurred by the latter due to the Re-measurement (unless the Contractor has undertaken measures to modify or repair the WEC after the Measurement and prior to the Re-measurement).
- 3.4.4 If the Re-measurement reveals a Re-measured SPL which exceeds the Warranted SPL, the Contractor
- a) shall reimburse the Employer for the cost reasonably incurred by the Employer for the Measurement unless the Employer was obliged to undertake the Measurement in any case, i.e. irrespective of any potential default on behalf of the Contractor (as an example, in cases when the building permit or mandatory laws, licences or regulations prescribe a such measurement of the sound power level),
 - b) shall reimburse the Employer for the cost reasonably incurred by the Employer for the Re-measurement (if any); and
 - c) may, at its discretion, take appropriate measures to modify and adjust the deficient WEC (to the extent that such modification or adjustment does not reduce or limit the functionality and performance of the WEC as defined in the TSA), and/or arrange, in consultation with the Employer, for the protection of any persons affected by the sound of the WEC (e.g. by installing adequate noise barriers), and
 - d) shall pay to the Employer Compensation from the date on which the WEC had to be shut down or operated with reduced operational speed, until the earlier of the following dates:
 - i. the date when the sound of the WEC is not leading to further limitations of the performance of the WEC (because the Contractor successfully adjusted the WEC or because adequate noise barriers have been installed or for any other reason), or
 - ii. the date when the overall limit of Contractor's liability for Compensation as defined in Clause 5.1.3 has been reached.

4 Compensation for shortfall in performance

- 4.1.1 In respect of each WEC which does not achieve the Warranted SPL, the Contractor shall pay to the Employer compensation ("Compensation") for loss of income suffered by the Employer due to the shortfall of the Warranted SPL for the relevant period of time as defined in Clause 3.4.4d) above.

- 4.1.2 Compensation shall be calculated according to the following formula and based on the following values:

$$C_{\text{loss}} = \text{REP}_{\text{rel}} \cdot \text{EP}_{\text{ave}} \cdot \left(\left(\frac{\sum_{v=1}^{25} D_{\text{Ray}}(v) \cdot \text{PC}_{\text{cal}}(v)}{\sum_{v=1}^{25} D_{\text{Ray}}(v) \cdot \text{PC}_{\text{adj}}(v)} \right) - 1 \right)$$

where:

- C_{loss} = Compensation (where $C_{\text{loss}} > 0$)
- REP_{rel} = relevant energy production of the WEC in kWh in the period of time for which Compensation is due
- EP_{ave} = amount (in currency per kWh) which is equal to the amount payable for compensation of non-compliance with the Availability Warranty (as defined in the Contract)
- $\text{PC}_{\text{cal}}(v)$ = Calculated Power Curve (i.e. the standard power curve of the relevant WEC as defined in the data sheet of such WEC)
- $\text{PC}_{\text{adj}}(v)$ = The calculated power curve of the relevant WEC considering the reduced rotational speed due to the non-compliance with the Warranted SPL
- $D_{\text{Ray}}(v)$ = Rayleigh distribution with the average wind speed v_{ave} to be agreed by the Parties

(If the WEC has to be operated in the reduced modus during certain hours of the day, only, the result achieved by the formula above has to be adjusted, accordingly.)

- 4.1.3 The Employer shall provide adequate evidence on the loss of energy yield suffered due to the shortfall of the Warranted SPL.

5 Terms and Conditions

This warranty is provided by the Contractor subject to the following conditions:

- 5.1.1 Reduction of WEC performance (due to emission problems)

It is a precondition to the payment of any Compensation under this warranty that the Employer can provide evidence that he has indeed suffered a loss of energy yield by not achieving the energy yield which he would have achieved if the WEC had met the Warranted SPL. (As an example, this could be the case where the Employer was forced by an administrative order or court decision to reduce the rotational speed and rated power of the WEC in order to comply with the Warranted SPL.) In other words, a mere non-compliance of the Measured SPL (or in case of a Re-measurement, the Re-measured SPL) with the Warranted SPL shall not entitle the Employer to receive Compensation under this warranty.

- 5.1.2 Operation and Maintenance

This warranty is given by the Contractor to the Employer on the basis of the Contract being continuously executed during the Warranty Term. Thus, this warranty assumes that during the Warranty Term:

- a) the WEC is operated in accordance within its design limits and the Contractor's operating instructions; and
- b) the Contractor is able to undertake regular service and maintenance of the WEC under the Contract.

5.1.3 Compensation and limitation of liability

The Contractor and Employer acknowledge and agree that the sums which would be payable under this warranty (being the value of "EP_{ave}" as defined in the table in Clause 4.1.2 above) constitute liquidated damages, and not a penalty, and they are fair and reasonable under the circumstances.

The Contractor's obligation to pay Compensation pursuant to Clause 4 shall be the sole and exclusive liability of the Contractor and the sole and exclusive remedy of the Employer in relation to a breach of this warranty and in lieu of all warranties, expressed or implied, with respect to the sound power level of a WEC.

The Contractor's overall liability under this warranty shall in no case exceed an amount of ten (10) % of such part of the Contract Price (the term and amount as defined in the TSA) which corresponds to the value of the deficient WEC (being the WEC and all associated interior equipment supplied by the Contractor). If due to a defect leading to non-compliance with the Warranted SPL under this warranty the Employer receives or already received a price reduction of the Contract Price under the TSA as a compensation for such defect in respect to the relevant WEC, such price reduction shall be deducted from any Compensation payable for such WEC under this warranty.

For inspection purposes only
Consent of copyright owner required for any other use

For inspection purposes only.
Consent of copyright owner required for any other use.