KEY INFORMATION

Ward Lochee

Proposal

Erection of 850kW wind turbine with a 65m tower and 26m blades giving a total height of 91m to provide 30% of Dundee Cold Storage electricity demand

Address

Dundee Cold Stores Ltd
Whittle Place
Gourdie Industrial Estate

Applicant

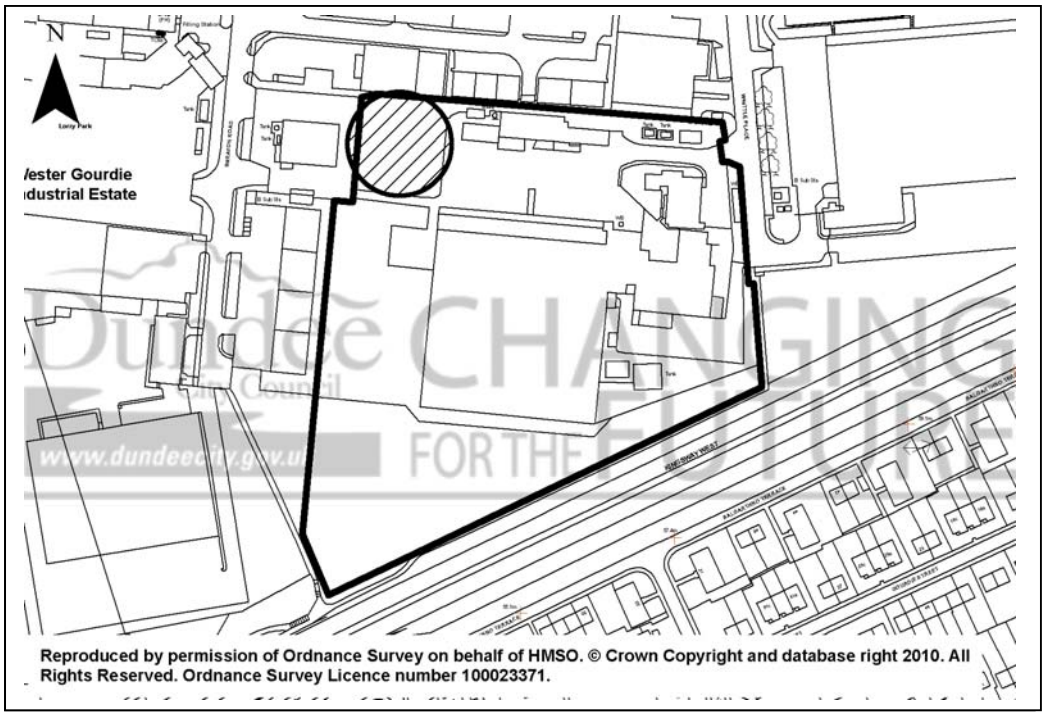
Dundee Cold Stores Ltd
Whittle Place
Gourdie Industrial Estate
Dundee
DD2 4TD

Agent

R D Energy Solutions (Ian McLean) SAC
Bush Estate
Edinburgh EH26 OPH

Registered 20 Aug 2009

Case Officer B Knox



Proposed Wind Turbine in Gourdie Industrial Estate

The erection of a wind turbine is RECOMMENDED FOR APPROVAL subject to conditions. Report by Director of City Development.

RECOMMENDATION

The proposed application complies with the policies of the development plan and the objections do not carry sufficient weight to merit refusal of the application. The application is recommended for APPROVAL subject to conditions.

SUMMARY OF REPORT

- Planning permission is sought for the erection of a single wind turbine within the grounds of the Dundee Cold Stores factory. The electricity to be generated will be used to fuel the plant. The turbine will measure 65m to the hub and an additional 52m for diameter of the blades. The nearest housing to the south is located approximately 230m from the turbine.
- Policies on renewable energy in the Dundee Local Plan Review 2005 are of particular relevance.
- A total of 1 objection has been received to the application.
- The proposal complies with national and local policy and guidance which support the use of renewable forms of energy in order to meet Government targets for the reduction of pollution in the future. It is considered that the proposal also complies with the environmental policies of the Dundee Local Plan Review 2005.
- The unique nature of the proposal has raised issues of noise, shadow flicker and visual impact.

DESCRIPTION OF PROPOSAL

Planning permission is sought for the erection of a single wind turbine generating 850kw of electricity at the Dundee Cold Stores site at Whittle Place, Dundee. The turbine will have three blades and the height of the tower will be 65m to the hub from ground level. The base diameter of the tower is 3.3m. The diameter of the rotor blades is 52m. The wind turbine will be located to the north and west of the existing factory buildings.

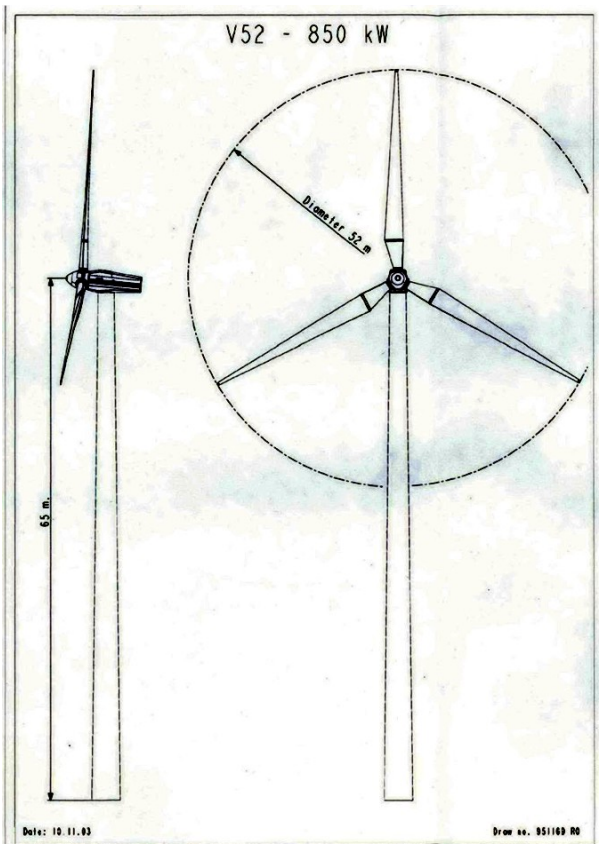
The wind turbine will not operate in periods when the wind speed is less than 4m/s or when it is higher than 25m/s. It is estimated that 75% of the energy generated would be consumed directly on site.

Upon request, the applicant submitted comprehensive supplementary information in support of the application taking into consideration issues such as visual and noise impact and shadow flicker.

SITE DESCRIPTION

The site is located to the north of the Kingsway and is accessed from Whittle Place on Gourdie Industrial Estate. It is currently used by Dundee Cold Stores which is a cold storage business. The site is comprised of a number of buildings with parking and turning area. The surrounding uses are of an industrial nature appropriate to their location within the Gourdie Industrial Estate. The Cold Stores buildings closest to the trunk road are visible from the Kingsway to passing motorists.

Beyond the industrial estate to the north lies Camperdown Country Park which also includes Camperdown Golf Course. The park and golf course area is heavily wooded with several species of mature tree. Within the country park there are two Listed Buildings. One of these is Category C (s) Listed and forms the former walled kitchen garden and adjoining buildings. This is located over 400 metres from the application site. The other building lies further to the north over 750 metres away from the site of the application and is the Category A Listed Camperdown House. Due to their woodland setting, there are limited views from these and there are no views from the application site into this area.



The Kingsway Trunk Road lies to the south of the area owned by the applicant. This is a busy route which acts as an outer ring road for the city and carries high volumes of traffic each day. It is also the main A90 route from the south through Dundee to Aberdeen.

Beyond the Kingsway are the nearest residential properties. The closest residential dwelling is located to the South East of the site on Balgarthno Terrace which is approximately 230 metres from the proposed turbine.

In terms of the nearby topography, the area to the south of the Kingsway is relatively flat but gently rises north to the application site. The land continues to slope up northwards and there are some hilly parts associated with the nearby Camperdown Golf Course.

POLICY BACKGROUND

Dundee and Angus Structure Plan 2001-2016

The following policies are of relevance:

Environmental Resources Policy 10: Renewable Energy - proposals for renewable energy development will be favourably considered where they deliver quantifiable environmental and economic benefits and any significant or cumulative adverse impacts on the natural and historic environment, landscape and local communities can be satisfactorily addressed.

Development proposals will be considered in the context of the wider environmental policies of the Structure Plan. Detailed criteria based policy, locational guidance and, where appropriate, areas of search for individual sources of renewable energy will be established by Local Plans. An Environmental Statement will be required for all large scale proposals or where development is likely to have significant effects on the environment

Dundee Local Plan 2005

The following policies are of relevance:

Policy 24: Principal Economic Development Areas - the principal Economic Development Areas are of City-wide significance and as such will be safeguarded for industrial and business use.

Policy 77: Renewable Energy and Energy Efficiency - the principle of such developments is supported by the Council. Small scale wind energy developments will be favourably considered where they are consistent with other environmental policies of the Plan, they do not necessitate ancillary developments that may have an adverse environmental impact eg power lines, and where they have no significant adverse or cumulative effects on:

a neighbouring residential occupiers, other uses or road safety by reason of visual disturbance, noise emission, shadow flicker, reflected light or electro-magnetic influences;

b landscape, and;

c aircraft activity or known flight paths of migratory birds.

Policy 26: General Economic Development Areas - this Policy provides general support for the establishment and retention of Class 4, 5 and 6 developments.

Scottish Planning Policies, Planning Advice Notes and Circulars

The following are of relevance:

SPP - this sets out the Government's policies on a number of issues including renewable energy. The section provides advice on the type of issues likely to be encountered such as landscape and visual impact, impact on the natural and built heritage, contribution of the development to renewable energy generation targets, effect on the local and national economy and tourism and recreation interests, benefits and disbenefits for communities, aviation and telecommunications, noise and shadow flicker, and cumulative impact.

Planning Advice Note (PAN) 45: Renewable Energy Technologies - the purpose of this PAN is to support the policies in SPP 6 by providing information and advice on the technologies for harnessing renewable energy for electricity generation. The section on wind power offers information and advice on the technologies and characteristics of on-shore wind generators. It is mainly concerned with larger groupings of wind turbines, referred to as wind farms. However, much of the PAN is equally applicable to smaller scale developments, in particular the issue of visual amenity.

Non Statutory Statements of Council Policy

There are no non statutory Council policies relevant to the determination of this application.

SUSTAINABILITY ISSUES

The proposal seeks permission for a turbine to generate power. The applicants estimate that this will offset the emission of over 1,000 tonnes of carbon dioxide during every year of operation. It will therefore be a strong step in helping meet the regional and national carbon reduction targets.

SITE HISTORY

Although there have been a number of applications for alterations to the properties on site over the years, the

application considered to be of relevance to the proposal relates to an application for a 50m high anemometer mast on the same site as the proposed turbine was approved on 24 August 2009 (ref:09/00271/FUL).

PUBLIC PARTICIPATION

The application was advertised as a bad neighbour development (under Section 34) on 28 August 2009 due to the height of the proposed turbine.

Statutory neighbour notification was carried out and 1 letter of objection was received from a nearby business. The concerns raised relate to the following:

- Our processes currently benefit from a clean, vibration free environment and we have a class 100 cleanroom in our building.
- Any excessive noise, vibration and dust ingress will have significant and detrimental effect on our manufacturing processes, the quality of our products and therefore on our business.
- The proposal to site a large scale wind turbine within 20m of our manufacturing building is completely unacceptable.

Members will already have had access to this letter and the points raised are considered in the Observations Section and the Material Considerations sections of this Report.

During the consideration of the application, the applicant undertook a major mail send in the local area to raise awareness of the project and assess the level of objection or support. It is intended to discuss this in the Material Considerations Section of the report.

CONSULTATIONS

All statutory bodies were consulted on the proposal and a wider list of external consultees was compiled to ensure extensive consultation was undertaken and the views of those who responded are summarised below.

The Head of Environmental Health and Trading Standards

Advises that appropriate conditions can be imposed to ensure that adequate noise control measures are applied to the operation of the turbines to protect neighbouring residents from unacceptable noise levels.

They are in agreement with the findings of the technical reports, prepared by consultants for the applicants and conclude that there will be no adverse impact.

These issues are discussed further in the Observations below.

Scottish Natural Heritage

Advised that they have no objections to the proposal but that they consider a turbine smaller in height would have less of a visual impact.

These issues are discussed further in the Observations below.

Ministry of Defence (MOD)

The MOD have reviewed the planning application for the proposed turbine at the site. They confirm that they have no objection to the proposal. They have also advised that in the interests of air safety, the turbine should be fitted with aviation lighting. This can be attached as a condition if Members are minded to approve the application.

Ofcom

Ofcom advised of the fixed link frequency bands that have the potential to be affected by the turbine. These

include CSS Spectrum Management and Joint Radio company. Details of their responses are provided below.

CSS (Spectrum Management)

CSS have advised that there is no objection based on a 1km radius from the individual turbine location.

Joint Radio Company (JRC)

The JRC advised that unfortunately part of the proposed development is located within 1km of a protected link site or path managed by JRC. The affected link is licensed to Scottish Hydro. The JRC therefore objected to the proposed turbine on this basis. The applicants had been in discussion with the JRC regarding this matter prior to the submission of the application and there are a number of different solutions which can be adopted.

Should Members be minded to approve the application, a condition can be attached in order to ensure that the applicants agree upon the method of mitigation with the operators of the link prior to the commencement of works.

NATS/NERL

They advised that the application was examined from a technical safeguarding aspect and does not conflict with their safeguarding criteria. There is therefore no safeguarding objection.

Civil Aviation Authority (CAA)

The applicant was involved in pre application consultation with the CAA. They were advised at that time that the turbine might have the potential to impact upon operations associated with Dundee Airport. As part of this, they recommended that the developer consult with the Airport licensee to gauge the scale of any impact. The detail of this shall be discussed below in relation to the operators of Dundee Airport (HIAL) who were consulted as part of the planning application.

They also advised regarding the potential need for aviation lighting that may be requested by other elements of the aviation industry such as the MoD. This matter has already been discussed above.

The CAA also provided advice on the colours of the turbine and mast and that is should be painted white unless other wise indicated by an aeronautical study. This can be attached as a informative if Members are minded to approve the application.

Advice was also given regarding the issue of charting requirements. The developers will need to provide details of the development to the Defence Geographic Centre in this regard and similar to the other issues raised this can be attached as an informative if Members are minded to approve the application.

Dundee Airport (HIAL)

HIAL provided information to the applicants agent at pre application stage and advised that the proposed scale of development falls within the officially safeguarded area for Dundee Airport. The calculations showed that the turbine would infringe one of the protected surfaces and could impact upon the ability of Dundee Airport to operate safely within the existing safeguarding license.

From discussions with HIAL it was agreed that there is intervening higher ground which reduces the extent of safeguarding concerns. In addition, there are higher rise buildings and electricity pylons located around the Dundee Cold Stores site. These all act to reduce the impact of the proposed turbine on the airport operations and safeguarding criteria.

As such when HIAL were formally consulted as part of the planning application they advised that their calculations showed that there was likely to be sufficient mitigation for the turbine to be acceptable and they would therefore contact the CAA to request a variation to Dundee Airports License. This shall be at the cost of the developer.

If Members are minded to approve the application this shall be attached as an informative.

Historic Scotland

They considered the impact of the development on the settings of the scheduled ancient monuments within the city and concluded that although the turbine will be visible from the monuments, the settings of the monuments have already been substantially compromised by existing development and the additional of the turbine is unlikely to represent a significant adverse impact.

Historic Scotland also considered the impact of the turbine on the Category A Listed buildings and Inventory Designed Landscapes and consider that there is potential for a detrimental impact upon the setting. They therefore requested additional photomontages of the proposals from Camperdown House. These were provided by the applicant and it was concluded by Historic Scotland that they indicated the proposed turbine will not be visible from Camperdown House when the trees are in leaf and that there will still be substantial screening afforded by the trees in the winter months. They consider that the proposed development is therefore unlikely to have a significant adverse impact on the Category A Listed Building and its Inventory Designed Landscape.

OBSERVATIONS

Statutory Requirements

Section 25 of the Act provides that an application for planning permission (other than for a national development) shall be determined in accordance the development plan unless other material considerations indicate otherwise.

The proposals are consistent with the Scottish Executive's commitment to increase the proportion of energy generated from renewable sources in Scotland. In this regard there also generally conform with the advice and guidance set out in SPP and PAN45 discussed in the report above.

Background to the Proposal

Dundee Cold Stores is the only remaining large scale frozen fruit and vegetable processing plant in Scotland. It operates 24 hours a day during the harvest, taking in lorry loads of stock every hour. Investment has been put into the plant to increase efficiency and productivity. The factory located adjacent to the Kingsway, is a contributor to the local economy provided 25 full time staff and up to 150 seasonal workers. There are two core drivers for the site to develop wind energy on their site:

a Reduce energy cost and provision of a sustainable source of revenue

b Reduce the environmental footprint of the site

Recent government policy encourages energy efficiency leading to a reduction in greenhouse emissions.

The Development Plan

The provisions of the development plan relevant to the determination of this application are specified in the Policy background section above.

Dundee and Angus Structure Plan 2002

In terms of the Structure Plan, Environmental Resources Policy 10 encourages renewable forms of energy and the application meets these requirements. Therefore the application proposals are consistent with the Structure Plan strategy and seek to implement the principles which it advocates. This policy goes on to say that any significant adverse impacts on the natural and historic environment, landscape and local communities should be addressed. These issues will be discussed in relation to Policy 77 of the Dundee Local Plan Review 2005.

Dundee Local Plan Review 2005

The site is located within Gourdie Industrial Estate and a principal economic development area (Policy 24 applies), where the Council will encourage the establishment and retention of business and industrial uses falling within Classes 4 'Business', Class 5 'General Industry and Class 6 'Storage and Distribution'. The proposal will not jeopardise the use of the site for industrial use as the turbines will only use a small site area. The proposals are therefore in accordance with this particular Policy of the Dundee Local Plan Review 2005.

Policy 77 supports the principle of such developments and opportunities for forms of renewable energy are encouraged. Small scale wind energy developments will be favourably considered where they are consistent with other Environmental policies of the Plan.

It also states that proposals shall be supported where they have no significant adverse impact on:

a neighbouring residential occupiers, other uses or road safety by reason of visual disturbance, noise emission, shadow flicker, reflected light or

b electro-magnetic influences;

c landscape; and

d aircraft activity or known flight paths of migratory birds.

It is therefore considered to be appropriate to assess the proposals against each of the criteria above.

Noise

The issue of noise was discussed at great length during pre-application stage and during the processing of the planning application. A detailed noise impact assessment was provided by consultants and submitted as part of the planning application. One of the key issues is that of the sound power output of the turbines at specific wind speeds. The assessment of the noise from the turbines was predicted, and considered the impact on housing at a particular distance. The Head of Environmental Health and Trading Standards agrees with the predicted noise levels. The greatest potential impact appears to be in relation to night time noise when the ambient background noise levels are likely to be lower.

In considering the application, reference was made to ETSU-R-97: The Assessment and Rating of Noise from Wind Farms by the Energy Technology Unit (ETSU), which is considered as providing best practice. It also acknowledges that lesser separation distances are acceptable depending on the turbines used and the specific conditions at the site.

It is concluded that the application can be supported with appropriate conditions to protect residential amenity and ensure monitoring is carried out to maintain acceptable noise levels.

Visual Impact

The turbine is a tall structure, located in an area where the majority of structures are considerably lower in total height. It will therefore be highly visible and it is impractical to consider concealment. The ancillary structures may be visible from areas close to the development but due to the large industrial buildings they shall be largely screened. A series of photomontages were submitted as part of the planning application.

Scottish Natural Heritage (SNH) has issued a document known as the Strategic Locational Guidance for Onshore Wind Farms in respect of the Natural Heritage to help identify the most sensitive areas and steer developments towards places where the impacts may be less significant.

In this regard, SNH has prepared maps to show the range of landscape and biodiversity sensitivities at the strategic level to be considered in locating wind farms. Sensitivity has been judged on the basis of the importance of the interest and its susceptibility to impact by wind farms. The application site is identified as lying within Zone 1 which is land with the Lowest natural heritage sensitivity and greatest opportunity for development.

In their consultation response SNH had no objection to the proposed development but were concerned that the turbine will dominate visually and suggested that the height of the turbine be reduced.

The applicant in their Environmental Supporting Document assessed the use of smaller scale turbines on site. This looked at the installation of micro turbines to the building of less than 20 metres in height. Taking into consideration the site constraints and facilitating works required, it was considered that capital cost of such a project would be over three times the cost of the proposed 850 kw option.

The applicant has sought to ensure through good siting and design that landscape and visual impacts are limited and appropriate to the location. The visual impact of the wind turbine has to be considered in relation to the existing industrial context of the site area. The proximity of housing particularly to the south of the site must also be considered in relation to the proposed turbines.

It should be noted that the appearance of the turbines in the surrounding landscape is a subjective one.

Shadow Flicker

Under certain combinations of geographical position, time of day and year and position of sun, it may be possible that the sun may pass behind a rotor and cast a shadow over properties. When the blades rotate a shadow forms for short periods and this effect is known as shadow flicker. A detailed assessment was carried out to determine the shadow flicker impact

on the dwellings potentially affected. The results of the detailed analysis showed that of the 70 building with the potential to be affected, 10 of these did not have windows that faced in the turbine direction.

Modern turbines are fitted with detailed control systems and there is an option to have equipment installed that can assess the orientation of the operational turbine and ensure that the turbine is only shutdown when the orientation is such that a shadow would be formed on the receptor window and/or installation of photocells that can judge whether the sun is bright enough to give rise to shadow flicker during noted sensitive periods. It is therefore recommended that a condition is applied to stop the relevant turbine operating entirely for a short period of time if, and when, the problem occurs.

Visual Disturbance

Drivers are often faced with a number of varied and competing distractions during any normal journey. At all times drivers are expected to take reasonable care to ensure their own and others safety. Wind turbines should not therefore be treated any differently from other distractions that might be faced and should not therefore be considered to be particularly hazardous. There are no known significant road safety concerns in terms of visual disturbance associated with the proposal.

Television Reception

Ascertaining the potential impact of the proposal on local television transmission signals primarily involved the completion of the BBC wind farm assessment tool. This showed that there was some potential impact to residential properties.

The applicant is agreeable to a condition requiring the submission of a detailed study investigating the impact of the proposal on TV reception and proposed mitigation measures. In this regard it is also intended that any condition will require the developer to pay for the implementation of the mitigation measures where the presence and operation of the turbine directly impacts upon the quality of the television reception. The developer has indicated that they are agreeable to this.

It is concluded from the foregoing that the proposal complies with the provisions of the development plan.

Other Material Considerations

The other material considerations to be taken into account are as follows:

1 Applicants supporting information:

Along with the application, the applicant submitted a detailed Environmental Study which coves many of the issues discussed above in detail. It describes and quantifies the potential environmental impacts associated with the construction, operation and decommissioning of the turbine proposed.

As part of this it also provides further details of the site and information on the alternatives to the proposed development which would help to reduce operating costs and reduce the carbon foot print of the site. These include looking at smaller scale wind generation, solar photovoltaic panels, gas combined heat and power plant and biomass generation. For a variety of reasons stated in the report including economic reasons, site constraints and the fact that heat energy is not sufficiently required on site to warrant such development, these were not considered to be suitable. These are explained fully in the accompanying Environmental Report submitted with the application.

The remainder of the document is divided into eleven sections with each chapter looking at the potential issues in relation to the installation of a turbine of this scale. The results of each study are presented and where appropriate mitigation measures are put forward. The majority of these have already been considered in the report above and those issues which have not already been discussed which have been assessed by the applicant are now discussed below:

- Ecology:

The proposed location for the wind turbine is on land that is already part of a commercial site. The majority of buildings in the site are commercial buildings but to the north of the site outwith the Gourdie Industrial Estate is Camperdown Country Park. Within this area there are a number of species of flora and fauna but it is considered that the actual impact from the turbine would be negligible.

Situated approximately 3 km from the site is the Inner Tay Estuary which is a designated Site of Special Scientific Interest and the First of Tay Estuary which is a designated RAMSAR site.

SNH were consulted as part of the application and raised no issues regarding the impacts upon flora and fauna in these locations.

- Public Safety:

PAN 45 provides guidance on the operational safety of a wind turbine and in this regard the applicant provided the following survey results:

General Safety standards- The proposed turbines meets the required international European and British Standards including BS EN 61400-1:1995 " Wind turbine generator systems - safety requirements".

Blade loss- As stated above the turbine has been designed to meet the required safety standards and this includes suitable consideration for the risk of blade loss.

Ice throw - Modern turbine designs are able to accommodate blade heating systems for sites where there is a high likelihood of blade icing occurring. The manufacturer of the turbine shall guide the developer as to the requirement for this technology and if not utilised then the turbine would be programmed to shut down during periods of potential icing.

Lightening strike- The turbine will have the required level of lightning protection within the build.

Proximity to roads and railways- Transport Scotland recommend that the fall distance from the Trunk Road is 1.5 times the total

height of the turbine. The proposed turbine position and height meets this requirement.

2 Consultation carried out by applicant

In addition, the applicant carried out a large scale mail drop of nearby properties totalling approximately 2300 leaflets. This included residential properties to the south of the Kingsway. The leaflet provided information on the proposals and incorporated a pre paid response card to invite comments.

In total 113 residents responded and 98 of these indicated they are in favour of the development. In terms of those respondents who raised concerns, the main issues raised relate to noise and visual impact. These issues have been discussed in the report above.

It is considered that the information is helpful in assessing the general views of the public in addition to the statutory neighbour notification procedures which were carried out.

3 Views of the objector:

One letter of objection was received in relation to the proposal.

The objection received comes from a nearby commercial premises regarding the potential for any excessive noise, vibration and dust ingress which may occur as it would have a significant and detrimental effect on their manufacturing processes, the quality of their products and therefore on their business. The issue of noise has already been discussed in the report above and it was considered that with the imposition of appropriate conditions there would be no unacceptable noise disturbance.

With regards to the potential for vibration the applicant provided additional information regarding this issue. The only mention of turbine related vibration in PAN 45 relates to the potential to use vibration sensors on blades to detect formation of ice in extreme conditions. However, there is no evidence to suggest that low frequency noise (infrasound) would present a significant issue in terms of vibration.

In addition, given the nature of the surrounding land uses within the Gourdie Industrial Estate including an adjacent haulage business, it is considered that it would not be reasonable to withhold planning permission for that reason.

In terms of dust ingress there is likely to be a period of construction work required to facilitate any turbine but the extent to which dust is resulting cannot be controlled.

It is concluded from the foregoing that insufficient weight can be accorded to any of the material considerations such as to justify the refusal of planning permission contrary to the provisions of the development plan. It is therefore recommended that planning permission be granted with conditions.

Design

The design and appearance of wind turbines is a controversial subject and there are many differing opinions as to the locations where they should be considered acceptable. The turbine is of a standard three bladed design located in an existing industrial area. Clearly, and as demonstrated by the applicants submission, there shall be a visual impact from many view points within and outwith the city. It is considered that it is acceptable in this location and shall reflect the Councils aspirations for the provision of a sustainable future.

CONCLUSION

It is concluded that the proposal complies with national and local policies and Government guidance, which promote the use of renewable forms of energy. It is considered that supplementary analyses and reports submitted by the applicant sufficiently address the issues raised and conclude that the proposed wind turbines will have no adverse effect on adjacent residents or the surrounding environment. Therefore the application is recommended for approval subject to conditions.

RECOMMENDATION

It is recommended that consent be GRANTED subject to the following conditions:

1 Prior to the installation of the turbine the operator shall submit a test certificate to the Council showing that the measured sound power levels of the turbine, measured in accordance with IEC61400-11, does not exceed the values shown in Figure 1.1 of the document "Schedule of Noise Conditions (Ref: SONC 7.5.10). The turbine shall not be installed until written approval has been given by the Council.

2 Between 2300 and 0700hours, the turbine will operate in accordance with the night time levels detailed in Figure 1.1 of the Schedule of Conditions document (Ref: SONC 7.5.10).

3 The rating of noise emissions from the combined effect of the wind turbine, when assessed in accordance with the attached guidance notes, shall not exceed the values set out in Figure 3.1 of the Schedule of Noise Conditions document (Ref: SONC 7.5.10). Noise limits shall apply to properties which lawfully exist or have planning permission at the date of consent.

4 At the request of the Council, following what it considers to be a warranted complaint made to it, the operator shall, at their own expense, employ a consultant approved by the Council to assess the level of noise emissions from the turbine. The protocol and methodology for the assessment shall be submitted to the Council for written approval within 30 days from the date of request, or other such time period as agreed in writing with the Council and measurements shall commence within 14 days of said approval. A report detailing the results of the measurements shall be submitted to the Council within 14 days of completion of the data acquisition or other such time period as agreed in writing by the Council.

5 Commencing with the first commercial generation of electricity from the turbine, the

operator shall continuously log the arithmetic mean wind speed, arithmetic mean wind direction in 10 minute periods from the nacelle anemometer of the turbine, duly corrected for the presence of the rotating blades. Wind speed shall be "standardised" to a reference height of 10metres as described in ETSU-R_97 at page 120 using a reference roughness of 0.05metres. The operator shall also record the power generated by the turbine and make such data available to the local authority within 7 days of receipt in writing of a request. The data shall be tabulated to include the ten-minute average sound power level calculated from the turbine data.

6 If, in the opinion of the Council, noise emitted from the turbine contains;

a any distinguishable, discrete, continuous notes (whine, hiss, screech, hum, or similar)

b distinct impulses (bangs, clicks, clatters, thumps, or similar noise)

c a characteristic noise sufficiently regular as to attract attention

as identified at any residential property, then a reduction of 5 dB will be applied to the permitted levels detailed in Condition 3.

7 If at any time the turbine is not operational for a continuous period of 6 months, it shall be deemed to have ceased to be required and, unless otherwise agreed in writing with the Council, the wind turbine and ancillary equipment shall be dismantled and removed from the site within the following 2 months and the ground fully reinstated to the satisfaction of the Council.

8 Details of aviation obstruction lighting and how it will be maintained shall be submitted to the Council for approval before any development is commenced and if approved the development shall be carried out only in full accordance with such approved details.

9 The wind turbine hereby permitted shall be shut down on each and every occasion when shadow flicker is produced at the predicted affected properties. The blades of the turbine(s) shall remain stationary until such time as conditions are such that shadow flicker will not occur at the predicted affected properties.

10 Prior to the commencement of development, there shall be a detailed study regarding the impact upon television reception submitted to and approved in writing by the Council. For the avoidance of doubt this shall include mitigation measures to be undertaken at the affected properties. It shall thereafter be the applicants responsibility to address any adverse impact on television reception caused by the proposed turbines to surrounding residential properties in accordance.

11 The applicant shall provide evidence that there shall be no detrimental impact upon existing telemetry links. This shall include details of a technical solution to the satisfaction of the Council in consultation with the affected groups. This shall be required to be agreed in writing prior to the commencement of development on site.

Reasons

1 In order to protect surrounding residents from unacceptable levels of noise from the wind turbine.

2 In order to protect surrounding residents from unacceptable levels of noise from the wind turbine

3 In order to protect surrounding residents from unacceptable levels of noise from the wind turbine

4 In order to protect surrounding residents from unacceptable levels of noise from the wind turbine.

5 In order to protect surrounding residents from unacceptable levels of noise from the wind turbine.

6 In order to protect surrounding residents from unacceptable levels of noise from the wind turbine.

7 To ensure that the redundant equipment does not contribute to roadside clutter and that the site is reinstated to a satisfactory standard.

8 To ensure that the proposed development does not interfere with the aircraft movement.

9 To protect the amenity enjoyed by occupants of surrounding residential properties from potential shadow flicker caused by rotating blades of the wind turbine

10 To ensure that TV reception in the surrounding area is not adversely affected in the interests of residential amenity.

11 To protect an existing telemetry link.