Inverclyde council

AGENDA ITEM NO. 3

Local Review Body **6 August 2014**

Planning Application for Review

Mr J Dunn
Erection of a Single Wind Turbine 70M High to Blade Tip and Associated Infrastructure:
Land South West of Auchentiber Bridge, Auchenfoyle, Auchentiber Road by Port Glasgow (14/0004/IC)

Contents

PLANNING APPLICATION AND PLANS

Regeneration and **Planning**
Development Control & Conservation
Inverclyde council

Head of Regeneration and Planning
Municipal Buildings
Clyde Square
Greenock PA15 1LY

RECEIVED 2584

47

FOR OFFICIAL USE ONLY	
Reference No.	14/0004/IC
Date of Receipt	
Fee Paid	
Date Fee Received	
Date Valid	
Receipt No.	

PLANNING APPLICATION

Town & Country Planning (Scotland) Acts

The undernoted applicant hereby makes application for Planning Permission for the development described on this form and the accompanying plans.

see note 1

1. *Particulars of Applicant*	*Particulars of Agent (if any) acting on applicants behalf:*
Name Mr John Dunn	Name VG Energy Ltd (Beinn Lewis)
Address Burnside Farm, Langbank	Address Waterside Farm, Glasgow Road,
Postcode PA14 6TN	Galston Postcode KA4 8PB
Telephone Number N/A	Telephone Number 01563 829999
	Profession Planning Consultant

see note 2

2. *Description of Development*

Erection of a single wind turbine (30m tip, 44m Hub) & Associated Infrastructure at land Southwest of Auchentiber Bridge

Site Location Turbine Co-ordinates = E: 231595 N: 647497

Site Area (hectares) 0.4640 Number of dwellinghouses proposed N/A

New gross floorspace (sq. metres N/A

see note 3

3. *Application Type* (Tick appropriate box/es)

(a) Permission in Principle	☐	(c) Detailed Permission	☑
(b) Approval of Matters specified by conditions	☐	(d) Change of Use of land/buildings	☐

(e) Other (please specify) .....

see note 4

4. *Applicants Interest in site* (Tick appropriate box)

(a) Owner	☑	(c) Tenant	☐
(b) Lessee	☐	(d) Prospective Purchaser	☐

(e) Other (please specify) .....

Revision 'A' - November 2008
Revision 'B' - December 2008
Revision 'C' - July 2009
Revision 'D' - October 2009
Revision 'E' - December 2009
Revision 'F' - April 2010
Revision 'G' - May 2013

see note 5

5. *Existing Uses*

(a) Please state the existing use(s) of the land/buildings: open farmland

(b) Was the original building erected before 1st July 1948? N/A Yes / No

Has the original building been altered or extended N/A Yes / No

If yes, please indicate nature of alteration / extension and if possible approximate dates. N/A

If the land / buildings are vacant, please state last known use. N/A

see note 6

6. *Access Arrangements and Parking* (Tick appropriate box/es)

(a) Not Applicable	☐	(e) Number of existing on site parking places	☐
(b) New vehicular access proposed	☑	(f) Number of proposed on site parking places	☐
(c) Existing vehicular access to be altered / improved	☐	(g) Detail of any available off site parking	☐
(d) Separate pedestrian access proposed	☐		

see note 7

7. *Drainage Arrangements* (Tick appropriate box/es)

(a) Not Applicable	☑	(c) Connection to existing public sewer	☐
(b) Public Sewer	☐	(d) Septic Tank	☐

If (d), indicate method of disposal of effluent (e.g. soakaway, watercourse etc).....

see note 8

8. *Water Supply* (Tick appropriate box/es)

(a) Not Applicable	☑	(c) Existing private supply	☐
(b) Public Main	☐	(d) Proposed private supply	☐

If (c) or (d), please specify nature of supply source and proposed storage arrangements.....

see note 9

9. *Building Materials* (Complete as appropriate)

(a) Not Applicable	☑
(b) Outside Walls	Material..... Colour.....
(c) Roof Covering	Material..... Colour.....
(d) Windows	Material..... Colour.....
(e) Boundary Treatment	Material..... Colour.....

see note 10

10. Landscaping

Is a landscaping/tree planting scheme proposed? Yes ☐ No ☑

Are any trees/shrubs to be cleared on site? Yes ☐ No ☑

If yes, please show details of scheme on a SITE PLAN

see note 11

11. Costings

What is the estimated costs of any works to be carried out? £.....

see note12

12. Confirmation

Signature of applicant/agent.... .....

on behalf of..... Mr John Dunn ..... Date 20/12/2013

see note 13

CERTIFICATES UNDER ARTICLE 15 OF THE TOWN AND COUNTRY PLANNING (DEVELOPMENT MANAGEMENT PROCEDURE)(SCOTLAND) REGULATIONS 2008

Either certificate A, B or C must be completed together with certificate D

CERTIFICATE A (To be completed where the applicant is owner of the whole application site including any access visibility splays and land required for drainage systems or water connections)

I hereby certify that:

No person other than * ~~myself~~/the applicant was an owner (refer to note (a)) of any part of the land to which the application relates at the beginning of the period of 21 days ending with the date of the accompanying application

CERTIFICATE B (To be completed where the applicant does not own the whole application site including any access visibility splays and land required for drainage systems or water connections)

I further certify that:

* I have/the applicant has given the requisite notice (Notice No.1) to all persons other than * myself / the applicant who at the beginning of the period of 21 days ending with the date of the accompanying application were (refer to note (a)) owners of any part of the land to which the application relates.

Name(s) of Owner	Address(es)	Date of Service of Notice(s)
.....	.....	.....
.....	.....	.....
.....	.....	.....

* Delete whichever is inappropriate

NOTE (a) Any person who in respect of any part of the land is the proprietor of the dominium utile or is the lessee under a lease thereof of which not less than 7 years remains unexpired.

CERTIFICATE C (To be completed in EVERY CASE)

I further certify that:

* (1) None of the land to which the application relates constitutes or forms part of an agricultural holding

* (2) I have/the applicant has given the requisite notice to every person other than myself/himself who at the beginning of the period of 21 days ending with the date of the application was a tenant of any agricultural holding any part of which was comprised in the land to which the application relates.

These persons are:

Name(s)	Address(es)	Date of Service of Notice(s)
.....	.....	.....
.....	.....	.....
.....	.....	.....

CERTIFICATE D

I confirm that I have been unable to notify all parties under Certificates A, B and C

* Delete whichever is inappropriate

Signature of ~~Applicant~~/Agent .....

On behalf of Mr John Dunn

Date 20/12/2013

see note 15

CHECKLIST - The following documentation should be submitted:

please tick all boxes

- [x] TWO APPLICATION FORMS
- [ ] TWO SETS OF PLANS
- [x] FEE (Where appropriate)
- [ ] DESIGN & ACCESS STATEMENT (National and Major applications only)
- [ ] PRE-APPLICATION CONSULTATION REPORT (National and Major applications only)

WARNING

If any person issues a certificate which purports to comply with the requirements of Section 35 of The Town and Country Planning (Scotland) Acts, and contains a statement which he knows to be false or misleading in a material particular or recklessly issues a certificate which purports to comply with those requirements and which contains a statement which is false or misleading in a material particular he shall be guilty of an offence and liable on summaryconviction to a fine not exceeding level 3 on the standard scale.

Revision 'A' - November 2008
Revision 'B' - December 2008
Revision 'C' - July 2009
Revision 'D' - October 2009
Revision 'E' - October 2011

SITE PHOTOGRAPHS

Photographs taken from Auchentiber Road on 22 January 2014 with I-Phone 4s (lens with a focal length of 4.3mm, equivalent to 35mm focal length on 35mm film SLR camera or full frame digital SLR camera: a moderate wide angle)

REPORT OF HANDLING DATED 6 MARCH 2014

Inverclyde council

REPORT OF HANDLING

Report By:	**Guy Phillips**	**Report No:**	**14/0004/IC** **Local Application Development**
Contact Officer:	**01475 712422**	**Date:**	**6th March 2014**

Subject: **Erection of a single wind turbine 70m high to blade tip and associated infrastructure at Land South-West Of Auchentiber Bridge, Auchenfoyle, Auchentiber Road by Port Glasgow**

SITE DESCRIPTION

The site is in the Green Belt to the south of Auchentiber Road (a designated Core Footpath Route) which runs east to west between the B788 and Auchenbothie Road. Port Glasgow lies to the north and Kilmacolm to the south-east. There are two lines of electrity pylons in proximity to the site: one running south-east to north-west, approximately 300m to the east, and the other, approximately 1km to the south, running north-east to south-west. Residential properties in proximity to the site are Auchentiber Farm, approximately 740m to the north-west, Gryffe Lee, approximately 740m to the west, Auchenfoyle Farm approximately 570m to the south-west, and High Mathernock Farm, approximately 900m to the south-east.

PROPOSAL

It is proposed to construct a 70m to blade tip wind turbine accessed by an approximately 100 m long track to be formed off Auchentiber Road. Approximately 70m to the east of the proposed turbine is an approximately 12 square metre, flat roof, turbine meter housing with a roughcast finish.

On the hillside to the north of Auchentiber Road, planning permission has previously been granted for three wind turbines: one at High Mathernock Farm (following an appeal to the Scottish Government) and two at Priestside Farm (following an appeal to the Council's Review Body). An application for a single turbine at High Auchenleck Farm, also on the hillside to the north of Auchentiber Road, is under consideration. All lie to the north-east of the application site and are approximately 700m (High Mathernock), 1200m (Priestside), 1300m (Priestside) and 1500m (High Auchenleck) distant. None of the approved turbines have yet been erected, however, a temporary wind monitoring mast is in place at the High Mathernock site.

The site of the proposed Corlic Hill wind farm lies approximately 1.2km to the north-west.

DEVELOPMENT PLAN POLICIES

Local Plan Policy UT6 - Renewable Energy Infrastructure

In assessing proposals for renewable energy infrastructure, Inverclyde Council, as Planning Authority, will have regard to the impact on:

(a) the natural environment and built heritage of the locality;
(b) the landscape, particularly when viewed from major transport corridors;
(c) residential amenity;
(d) tourism and leisure resources, particularly if within the Clyde Muirshiel Regional Park; and
(e) the operation of aircraft and telecommunications equipment.

Local Plan Policy UT6A - Wind Farms of 20MW and Above

Wind farms with an output of 20 MW and over will be supported where:
Wind farms with an output of 20MW and over will be supported where:

a) the objectives of international natural heritage designation are not compromised or where the proposed development is likely to have an adverse effect:

- there is no alternative solution; and
- there are imperative reasons of over-riding public interest, including those of a social or economic nature;

b) the objectives of national natural heritage designation and the overall integrity of the area are not compromised or where any significant adverse effects on the qualities for which the area has been designated are clearly outweighed by social and economic benefits of national importance;

and where the proposed development:

c) is sited within the landform to ensure it does not have a detrimental effect on the landscape and wider environment;

d) does not have an unacceptable adverse impact on the positive strategic assets of Clyde Muirshiel Regional Park and the West Renfrew Hills Scenic Area, such as:

i. landscape and visual amenity;
ii. tourism;
iii. recreation; and
iv. conservation;

e) does not have an unacceptable adverse impact directly on the built heritage of the area or its setting;

f) does not have an unacceptable adverse impact on biodiversity;

g) does not have an unacceptable impact on the water environment, including its quality, quantity and ecological status;

h) does not lead to unacceptable cumulative impacts on the landscape;

i) does not have an unacceptable adverse effect on aviation interests;

and where:

j) in consultation with the relevant bodies, the presence of notifiable installations and exclusion zones are taken into account when designing sites; and

k) in consultation with the relevant bodies, the presence of broadcasting and telecommunications infrastructure are taken into account when designing sites.

Note (1) These criteria would also apply to smaller scale wind farms (<20MW) which can often be more easily accommodated in the landscape, therefore, some of the areas that are not suitable for strategic wind farms could be acceptable. It would still be necessary to protect the environmental and built heritage resources and the local community by ensuring they were designed and sited to incur minimum impact. Given the variety of combinations and sizes of turbines that could be used to produce an output up to 20MW, it is likely that it will only be possible to determine what is acceptable when specific applications are assessed.

Local Plan Policy UT6B - Small Scale Wind Turbine development

In assessing proposals for small scale wind turbine developments, Inverclyde Council, as Planning Authority, will be supportive where the proposed development satisfies the criteria of Local Plan Policies UT6 and UT6A, where relevant, and will have regard to the impact on:

a) neighbouring/adjoining properties and residential amenity generally;
b) road safety;
c) natural and built heritage resources in proximity to the site;
d) wildlife resources and habitats;
e) proximity to pylons and overhead power lines, and other service infrastructure; and
f) the landscape, especially when viewed from public vantage points, including local roads, neighbouring settlements, and when set against the skyline.

Local Plan Policy DS8 - Green Belt

There is a presumption against development in the designated Green Belt, as identified on the Proposals Map. Proposals will only be considered favourably in exceptional or mitigating circumstances and where the criteria for development in Policy DS10 for the 'Countryside' can be satisfied.

Local Plan Policy DS10 - Countryside

Development within the countryside (including the Green Belt) will be permitted only where it can be supported with reference to the following criteria:

(a) it is required for the purposes of agriculture and forestry;
(b) it is a recreation, leisure or tourism proposal which is appropriate for the countryside and contributes to the social and economic development of the area;
(c) there is a specific locational requirement for the use and it cannot be accommodated on an alternative site;
(d) it entails appropriate re-use of vacant buildings which it would be desirable to retain for their historic or architectural character; or
(e) it forms part of an establishment or institution standing in extensive grounds; and
(f) it does not adversely impact on the landscape character;
(g) it does not adversely impact on the natural heritage resource;
(h) it does not adversely affect the visual amenity of the area and is capable of satisfactory mitigation;
(i) there is a need for additional land for development purposes, provided it takes account of the requirements of the Structure Plan; and
(j) it complies with other relevant Local Plan policies.

Local Plan Policy HR1 - Designated Environmental Resources and Built Heritage

Development that would adversely affect, directly or indirectly, the natural or built heritage resources listed in Schedule 9.1 and where indicated, on the Proposals Map, will not normally be permitted.

Having regard to the designation of the environmental resource and built heritage, exceptions will only be made where:

(a) Sites of Special Scientific Interest (SSSI) will not be compromised;
(b) visual amenity and townscape will not be compromised;
(c) no other site, identified in the Local Plan as suitable, is available;
(d) the social and economic benefits of the scheme outweigh the total or partial loss of the environmental resource;
(e) the developer has demonstrated that the impact of the development on the environment will be minimised; and
(f) the loss can be compensated by habitat creation/site enhancement elsewhere, and where there are satisfactory arrangements to achieve this.

Local Plan Policy LR6 - Inverclyde Access Strategy

Inverclyde Council, as Planning Authority, will seek to protect and promote the 'core path network' (both existing and proposed) and the other key themes of the adopted Inverclyde Access Strategy, where these do not conflict with other Local Plan policies, in particular DS8 and DS10.

PROPOSED LOCAL DEVELOPMENT PLAN POLICIES

Policy SDS8 - Green Belt and the Countryside

There will be a presumption against the spread of the built-up area into the designated Green Belt and careful management to prevent sporadic development in the designated Countryside, as identified on the Proposals Map.

Policy ENV2 - Green Belt and the Countryside

Development in the Green Belt will only be considered favourable in exceptional or mitigating circumstances, while development in the Countryside will only be considered favourably where it can be supported with reference to the following criteria:

(a) it is required for the purposes of agriculture, forestry or, where appropriate, renewable energy (refer Policy INF1); or

(b) it is a recreation, leisure or tourism proposal which is appropriate for the countryside and has an economic, social and community benefit (refer to Policy ECN6); or

(c) there is a specific locational requirement for the use and it cannot be accommodated on an alternative site (refer Policies INF3 and INF7); or

(d) it entails appropriate re-use of redundant habitable buildings, the retention of which is desirable for either their historic interest or architectural character or which form part of an establishment or institution standing in extensive grounds (refer to Policy RES7); and

(e) it does not adversely impact on the natural and built heritage, and environmental resources;

(f) it does not adversely impact on landscape character;

(g) it does not adversely impact on prime quality agricultural land;

(h) it does not adversely impact on peat land with a high value as a carbon store;

(i) it does not adversely affect the visual amenity of the area and is capable of satisfactory mitigation;

(j) there is a need for additional land for development purposes, provided it takes account of the requirements of the Strategic Development Plan; and

(k) it has regard to Supplementary Guidance on Planning Application Advice.

Policy INF1 - Renewable Energy Developments

The Council will support development required for the generation of energy from renewable sources, subject to the proposal not having significant adverse effects upon:

(a) natural heritage designations (international and national designations should not be compromised);
(b) the landscape and wider environment;
(c) neighbouring settlements;
(d) tourism, recreation and conservation matters;
(e) the built heritage;
(f) biodiversity and the water environment;
(g) air quality;
(h) road safety and service infrastructure; and
(i) the cumulative effect of such proposals.

CONSULTATIONS

Civil Aviation Authority - No objections.

BAA Aerodrome Safeguarding - No objections.

NATS - CTC - No objections.

MOD Safeguarding - No objections.

Head of Environmental and Commercial Services - No objections subject to a visibility splay of 120m x 2.4m x 1.05m being achieved at the junction with Auchentiber Rd and 15 m of the access from Auchentiber Rd being surfaced in an impervious material.

Head of Safer and Inclusive Communities - No objections subject to the attachment of conditions to control the spread of Japanese Knotweed, potential ground contamination and noise and an advisory note on CDM Regulations.

PUBLICITY

The application was advertised in the Greenock Telegraph on 24th January 2014 as there are no premises on neighbouring land.

SITE NOTICES

The nature of the proposal did not require a site notice.

PUBLIC PARTICIPATION

Ten written representations have been received, of which eight are in objection and two in support.

The objectors to the proposal are concerned that:

- the proposed turbine creates an adverse visual impact in this part of Inverclyde's countryside, immediately outwith Clyde Muirshiel Regional Park. The adverse visual impact is significantly exacerbated by the turbines approved and proposed at the

nearby Priestside, High Mathernock and High Auchenleck, cumulating to form a mini wind farm over a small area of approximately one square kilometre.
- the proposal is commercial with power generated being sold to the National Grid and not used by the farm.
- there shall be noise nuisance.
- a precedent shall be set for other large scale developments.
- there is no need for more wind turbines in Scotland.
- wind turbines are not beneficial in tackling climate change.
- wind turbines are harmful to health.

The representations in support of the proposal advise that if planning permission is granted, the revenue generated by the turbine shall allow the applicant to renew fences, drain land and continue farming on a small acreage that is in his ownership and that The Haven charity shall be a beneficiary of a community fund to be set up to spread the benefit of the development to the wider community. The charity operates a rehabilitation facility at Horsecraigs, approximately 880m to the south of the application site.

ASSESSMENT

The site is located within the Green Belt, where Local Plan policies LR1, DS8 and DS10 and proposed Local Development Plan policies SDS8 and ENV2 apply. However, as a renewable energy development which may be expected to be located in a Green Belt/rural location, it is considered appropriate to assess the proposal against national and local planning policy for such developments.

The general planning policy position, stemming from Scottish Planning Policy, is that planning authorities should support the development of a diverse range of renewable energy technologies and that development plans or supplementary guidance must clearly indicate factors that will be taken into account in decision making. The Government itself provides web based renewables advice and this is reflected in the Council's Interim Planning Policy Position Statement on Small Scale Wind Farms, approved by the Safe Sustainable Communities Committee in March 2011, and by policy INF1 of the proposed Local Development Plan and its associated supplementary guidance. The assessment of this application against the policy position leads me to consider that while the proposal meets certain development criteria, the proposal overall is unacceptable. This position is explained in detail below.

The Interim Planning Policy Position Statement on Small Scale Wind Farms introduced a new Policy UT6B which identifies that the Council will be supportive of development where the criteria of Policies UT6 (Renewable Energy Infrastructure) and UT6A (Wind Farms of 20MW and above) have been met and there has been regard to:

a) the impact on neighbouring and nearby properties and residential amenity generally;
b) road safety;
c) natural and built heritage resources in proximity to the site;
d) wildlife resources and habitats;
e) proximity to pylons and overhead power lines and other service infrastructure;
f) the landscape, especially when viewed from public vantage points, including local roads; neighbouring settlements, and when set against the skyline.

Proposed Local Development Plan policy INF1 supports development required for the generation of energy from renewable sources, subject to them having no significant adverse effects upon a range of matters. The relevant matters in this instance are:

(a) natural heritage designations (international and national designations should not be compromised);
(b) the landscape and wider environment.
(d) tourism, recreation and conservation matters.

The Supplementary Guidance on Renewable Energy related to policy INF1 advises that the Council is funding a landscape capacity study in association with the local authorities in the Glasgow and the Clyde Valley Strategic Development Plan Authority to assess the landscape or accommodating all sizes of wind energy developments. When this is completed, it will be incorporated into the supplementary guidance. In the meantime the landscape and visual impact of any proposed development will be considered on a case by case basis from the information included with the developer's assessment. It is further advised by the supplementary guidance that the impact of the wind turbines upon a range of issues be addressed, including, green belt, cumulative impact, natural heritage designations, birds, the historic environment, communities, aviation, water, broadcasting installations and shadow flicker.

Local Plan Policies UT6 and UT6A and the supplementary guidance to proposed Local Development Plan policy INF1 require consideration of the potential impact on the operation of aircraft and telecommunications equipment, and I note that the National Air Traffic Service, BAA and the MOD offer no objections.

Criterion (b) of Local Plan policy HR1, (f) of Local Plan policy UT6B and (b) of proposed Local Development Plan policy INF1 require consideration to be given to landscape, visual amenity and the visual impact when viewed from public vantage points, including local roads, neighbouring settlements and when set against the skyline.

Local Plan Policies UT6 and UT6A and policy INF1 of the proposed Local Development Plan also require assessment of the impact on the natural and built environment, landscape, and residential amenity, all of which are also addressed by assessment against Local Plan policy UT6B (criteria a), b), c), d), e) and f). Countryside tourism is inextricably linked to the quality of landscape and views from public vantage points, and it is appropriate to consider this in an assessment against policy UT6B (criterion f). Criterion (a), (b), (d) and (i) of proposed Local Development Plan policy INF1 apply.

Accordingly it remains to assess the application against the relevant criteria listed in Local Plan policy UT6B and policy INF1 of the proposed Local Development Plan with reference to Scottish Planning Policy and other development plan policies as applicable.

a) Impact on neighbouring and nearby properties and residential amenity generally.

Policy UT6B and policy INF1 combine to require development to have regard to impact on neighbours, general residential amenity and cumulative impact. Potential impacts on nearby residential amenity arise from visual impact, noise and shadow flicker. The shadow flicker map included within the Appendix of the Environmental Report demonstrates that there are no houses impacted by shadow flicker. The Scottish Government's online advice "Onshore Wind Turbines" advises that where separation is provided between wind turbines and nearby dwellings of 10 rotor diameters shadow flicker should not be a problem. In this instance that figure is approximately 520m. Accordingly, shadow flicker does not impact residential property and the proposal accords with Government advice on separation. There are no objections from the Head of Safer and Inclusive Communities regarding noise impact, however, I am in agreement with his recommendation for the attachment of a condition to control noise in the event that planning permission were to be granted. There are four residential properties within 1 km of the site and the photomontage viewpoint locations map within the Appendix to the Environmental Report confirms that all of them fall within the area from which the turbine can be seen. Having assessed the relative positions of these properties to the proposed turbine, I consider that residents shall suffer some adverse impact upon their visual amenity, likely to be further exacerbated by a cumulative impact with the nearby turbines approved at Priestside and High Mathernock. Visual impact, however, diminishes with distance and I consider, in this instance, that the nearest houses to the wind turbine do not have their visual amenity impacted to a degree that justifies refusal of planning permission.

b) Road safety.

There are no objections from the Head of Environmental and Commercial Services on road safety grounds.

c)&d) Natural and built heritage resources in proximity to the site and wildlife resources and habitats.

The Devol Road Upland SINC site lies to the north–east of the site, across Auchentiber Road. I am, however, satisfied that it is not impacted by the proposal. The proposal therefore also accords with criterion (a) of proposed of proposed Local Development Plan policy INF1.

e) Proximity to pylons and overhead power lines and other service infrastructure.

The height of the proposed turbine is significantly exceeded by its separation from the two pylon lines. As such, I consider the proximity to be acceptable.

f) The landscape, especially when viewed from public vantage points, including local roads, neighbouring settlements, and when set against the skyline.

Scottish Government guidance for assessing visual impact indicates that scale is a relevant consideration, taking into account the significance of the landscape and the views, proximity, intervisibility and sensitivity of visual receptors. The submitted photomontages and wire frame diagrams are taken from viewpoints ranging between 0.8 and 5.6km away. They demonstrate that visual impact diminishes with distance, however, the proposed wind turbine is of a size and design frequently used for small scale renewable energy developments and, I consider has an adverse impact most significant upon Auchentiber Road, which is a designated core footpath route. As such, I consider the proposal to be at conflict with Local Plan policy LR6 in that it is harmful to the enjoyment of the core path network. The 70m to blade tip wind turbine is close to Auchentiber Road (approximately 100m to its south) and, given its significant scale, is a dominant structure in the landscape. I note that the turbine shall be viewed in the context of existing pylon lines, however, unlike an animated wind turbine, they are fixed structures and I do not consider their presence to justify planning permission being granted. Three wind turbines have been granted on the hillside to the north of Auchentiber Road. The approved turbines are inter-visible with that under consideration in this report. As such motorists (particularly those who travel regularly), residents, recreational cyclists and walkers shall pass through a landscape dominated by large wind turbines on each side of the road. The cumulative visual impact of the three approved wind turbines is, I consider, already significant, however, it is confined to the north side of Auchentiber Road. To grant planning permission in this instance would result in the road being straddled by wind turbines, thus increasing cumulative visual impact to a more significant and adverse degree.

As further evidenced by the submitted photomontages there are adverse visual impacts upon the local views from Auchentiber Road, where it is seen to break the skyline and in longer views from the surrounding area where it is seen in conjunction with the turbines approved at High Mathernock and Priestside. The greatest adverse visual impacts are, I consider upon occupiers of the houses within 1km of the site and upon travellers who would experience the presence of large wind turbines on each side of Auchentiber Road.

In summary, while there are wind turbines elsewhere throughout Scotland which are significantly higher than that proposed I consider that within the context of this part of Inverclyde's countryside the 70m to blade tip wind turbine introduces another dominant and unexpected visual interruption to the detriment of visual amenity and the recreational benefit of the core footpath route.

In response to the objectors' concerns not covered by my assessment against the Local Plan and proposed Local Development Plan:

- the use of the turbine to provide income to support farming is, I consider, an acceptable alternative to using power directly for agricultural use but does not provide a justification for such a significant visual intrusion.
- precedent is not a justification for refusing planning permission as each planning application requires to be considered on its own merits.
- climate change and potential harm to health are not material planning considerations.

Regarding the representations in support of the proposal, I consider the potential benefits to local agriculture and the financial benefits to The Haven charity to be significantly outweighed by the adverse visual impact of the proposal.

Given my unfavourable assessment on impacts upon visual amenity, landscape character and visitors' enjoyment of the countryside I consider the proposal fails to accord with criterion (f) of Local Plan Policy UT6B, and consequently Policy UT6 (criteria a and b), Local Plan policy LR6 and proposed Local Development Plan policy INF1 criteria (a), (b) and (d)

RECOMMENDATION

That the application be refused.

Reason

A combination of height, scale and prominence within this part of Inverclyde's countryside, proximity to three approved wind turbines and proximity to the core footpath network create an unexpected and dominant cluster of engineered structures detrimental to visual amenity and enjoyment of the countryside and contrary to:-

a. Policy UT6 of the Inverclyde Local Plan, criteria (a), (b), (c) and (d)
b. Interim Inverclyde Local Plan Policy UT6B, criteria (a) and (f)
c. Proposed Local Development Plan Policy INF1 criteria (b), (d) and (i)
d. Local Plan policy LR6.

Signed:

Case Officer: Guy Phillips

Stuart Jamieson
Head of Regeneration and Planning

CONSULTATION RESPONSES

TO: HEAD OF REGENERATION & PLANNING
FROM: HEAD OF ENVIRONMENTAL & COMMERCIAL SERVICES

Your Ref: 14/4/IC
Our Ref: DAC/14/04/14/4/IC
Contact: D A Chisholm
Tel: (01475) 7144841

INVERCLYDE COUNCIL
ENVIRONMENTAL & COMMERCIAL SERVICES
OBSERVATIONS ON PLANNING APPLICATION

RECEIVED
14 FEB 2014
3005

Planning Application No: 14/4/IC **Dated:** 17/1/14 **Received:** 17/1/14
Applicant: Mr J Dunn
Proposed Development: Erection of single wind turbine70m tip, 44m hub and associated infrastructure
Location: Land South West of Auchentiber Bridge Auchenfoyle
Type of Consent: Detailed Permission/~~In Principle/Approval of Matters/ Change of Use~~
No. of drawings submitted: 6

	Comments
1	A visibility splay of 120m x 2.4m x 1.05m high is required at the junction of the access to the development with Auchentiber Road.
	A minimum length of 15m of the access road from Auchentiber Road shall be surfaced in impervious materials.
	Section 56 approval will be required from this Service to form the proposed access.
2	The applicant states, 13.3 Environmental Report that consultations will take place with the relevant authorities prior to any abnormal load movements.

NOTES FOR INTIMATION TO APPLICANT

CONSTRUCTION CONSENT (S21)*	Not Required/~~Required for all road works~~
ROAD BOND (S17)*	Not Required/~~Required if building works are to be undertaken before roads are completed~~
ROAD OPENING PERMIT (S56)*	Not Required/~~Required for all works in the public road~~

*Relevant Section of the Roads (Scotland) Act 1984

Signed ..... Date 14/2/14
HEAD OF ENVIRONMENTAL & COMMERCIAL SERVICES

13/02/14DAC

Guy Phillips

From: David Ashman on behalf of Devcont Planning
Sent: 20 January 2014 14:57
To: Laura Graham
Subject: FW: Your Ref: 14/0004/IC (Our Ref: W(F)18556)

NATS reply

From: ALLEN, Sarah J [mailto:Sarah.ALLEN@nats.co.uk] **On Behalf Of** NATS Safeguarding
Sent: 20 January 2014 10:47
To: Devcont Planning
Subject: Your Ref: 14/0004/IC (Our Ref: W(F)18556)

The proposed development has been examined from a technical safeguarding aspect and does not conflict with our safeguarding criteria. Accordingly, NATS (En Route) Public Limited Company ("NERL") has no safeguarding objection to the proposal.

However, please be aware that this response applies specifically to the above consultation and only reflects the position of NERL (that is responsible for the management of en route air traffic) based on the information supplied at the time of this application. This letter does not provide any indication of the position of any other party, whether they be an airport, airspace user or otherwise. It remains your responsibility to ensure that all the appropriate consultees are properly consulted.

If any changes are proposed to the information supplied to NERL in regard to this application which become the basis of a revised, amended or further application for approval, then as a statutory consultee NERL requires that it be further consulted on any such changes prior to any planning permission or any consent being granted.

Yours faithfully,

Sarah Allen
Technical Administrator
On behalf of NERL Safeguarding Office

Guy Phillips

From: David Ashman on behalf of Devcont Planning
Sent: 29 January 2014 09:01
To: Laura Graham
Subject: FW: Consultation Request - Land Southwest Of Auchentiber Bridge, Auchenfoyle

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From: Windfarms [mailto:Windfarms.Windfarms@caa.co.uk]
Sent: 28 January 2014 12:37
To: Devcont Planning
Subject: RE: Consultation Request - Land Southwest Of Auchentiber Bridge, Auchenfoyle

Dear Sir/Madam

Request for Comment under the Town and Country Planning Act 1990 and the Town and Country Planning (Scotland) Act 1997

There is currently a high demand for CAA comment on wind turbine applications which exceeds the capacity of the available resource to respond to requests within the timescales required by Local Planning Authorities. The CAA has no responsibilities for safeguarding sites other than its own property, and a consultation by a Council is taken as a request for clarification of procedural matters. Councils are reminded of their obligations to consult in accordance with ODPM/DfT Circular 1/2003 or Scottish Government Circular 2/2003, and in particular to consult with NATS and the Ministry of Defence as well as any aerodromes listed in Annex 3 of the above documents, taking note of appropriate guidance and policy documentation. Should the Council be minded to grant consent to an application despite an objection from one of the bodies listed in the circular, then the requisite notifications should be made.

Whilst the CAA recommends all aerodrome operators/license holders develop associated safeguarding maps and lodge such maps with local planning authorities, the CAA additionally encourages councils/planning authorities to undertake relevant consultation with known local aerodromes regardless of status or the existence of any aerodrome/council safeguarding agreement, including local emergency service Air Support Units (e.g. Police Helicopter or Air Ambulance).

There is an international civil aviation requirement for all structures of 300 feet (91.4 metres)* or more to be charted on aeronautical charts. However, on behalf of other non-regulatory aviation stakeholders, in the interest of Aviation Safety, the CAA requests that any feature/structure 70 feet in height, or greater, above ground level is notified to the Defence Geographic Centre ICGDGC-ProdAISAFDb@mod.uk, including the location(s), height(s)* and lighting status of the feature/structure, the estimated and actual dates of construction and the maximum height of any construction equipment to be used, at least 6 weeks prior to the start of construction, to allow for the appropriate notification to the relevant aviation communities.

Any structure of 150 metres* or more must be lit in accordance with the Air Navigation Order and should be appropriately marked. Although if an aviation stakeholder (including the MOD) made a request for lighting it is highly likely that the CAA would support such a request, particularly if the request falls under Section 47 of the Aviation Act.

Cumulative effects of turbines may lead to unacceptable impacts in certain geographic areas.

The Ministry of Defence will advise on all matters affecting military aviation.

Should the Council still have a specific query about a particular aspect of this application the CAA will help in the clarification of aviation matters and regulatory requirements. Site operators remain responsible for providing expert testimony as to any impact on their operations and the lack of a statement of objection or support from the CAA should not be taken to mean that there are no aviation issues, or that a comment from an operator lacks weight.

Guidance relating to the impact of wind turbines upon aviation can be found at http://www.caa.co.uk/docs/33/Cap764.pdf. More generic comment relating to the CAA involvement in the planning process is described at http://www.caa.co.uk/docs/33/DAP_GuidanceOnCAAPlanningConsultationRequirements.pdf.

Yours Faithfully

Kelly Lightowler

K LIGHTOWLER
Squadron Leader (RAF)

Surveillance and Spectrum Management
Directorate of Airspace Policy
Civil Aviation Authority
45-59 Kingsway London WC2B 6TE
Tel: 020 7453 6534 Fax: 020 7453 6565
windfarms@caa.co.uk

*The effective height of a wind turbine is the maximum height to blade tip.

From: Grant Kennedy [mailto:Grant.Kennedy@inverclyde.gov.uk] **On Behalf Of** Devcont Planning
Sent: 17 January 2014 08:49
To: Building Standards; Roads; safer communities; Windfarms; Kirsteen_Macdonald@baa.com; DIO-Safeguarding-Wind@mod.uk; sarah.allen@nats.co.uk; Devplan Planning
Subject: Consultation Request - Land Southwest Of Auchentiber Bridge, Auchenfoyle

Consultation Request - Planning Application Ref - 14/0004/IC
Please can you comment on the application detailed in the attachment.
Could you reply at devcont.planning@inverclyde.gov.uk

Inverclyde council

Environment and Community Protection

Memorandum Safer Communities Planning Application Consultation Response	
To: **Planning Services** For the Attention of Guy Phillips	
From: **Safer and Inclusive Communities**	Date of Issue to Planning: **30.1 *2014***

Lead Officer: **Janet Stitt**	
Tel: **01475 714 270**	Email: janet.stitt**@inverclyde.gov.uk**

Safer Communities Reference (optional):	
Planning Application Reference:	**14/0004/IC**
Planning Application Address:	Land southwest of Auchentiber bridge Auchenfoyle
Planning Application Proposal:	**Erection of wind turbine.**

Team	Officer	Date
Food & Health	Michael Lapsley	
Environment & Safety *Contaminated Land*	Sharon Lindsay Roslyn McIntosh	20.1.14 20.01.2014
Public Health & Housing	Janet Stitt / Jim Blair	17.1.14
Environment and Enforcement	Stewart Mackenzie	29.01.14

Amend table entries as appropriate and insert date when each officer review is completed.

Healthy Working Lives

POSITIVE ABOUT DISABLED PEOPLE

Recommended Conditions:

It is recommended that the undernoted conditions be placed on any consent the council may grant:

Delete or amend as appropriate

Food & Health

No Comments

Environment & Safety

No Comments

Contaminated Land

1. That prior to the start of development, details of a survey for the presence of Japanese Knotweed shall be submitted to and approved in writing by the Planning Authority and that, for the avoidance of doubt; this shall contain a methodology and treatment statement where any is found. Development shall not proceed until treatment is completed as per the methodology and treatment statement. Any variation to the treatment methodologies will require subsequent approval by the Planning Authority prior to development starting on site.

Reason: To help arrest the spread of Japanese Knotweed in the interests of environmental protection.

2. That the presence of any previously unrecorded contamination that becomes evident during site works shall be brought to the attention of the Planning Authority within one week. Consequential Remediation Strategy shall not be implemented unless it has been submitted to and approved, in writing by the Planning Authority.

Reason: To ensure that all contamination issues are recorded and dealt with appropriately.

3. The use of the development shall not commence until the applicant has submitted a completion report for approval, in writing by the Planning Authority detailing all fill or landscaping material imported onto the site. This report shall contain information of the materials source, volume, intended use and verification of chemical quality (including soil-leachate and organic content etc) with plans delineating placement and thickness.

Reason: To protect receptors from the harmful effects of imported contamination.

Public Health & Housing

Comment:

This Service has been investigating a complaint of rotor shadow flicker which alleges that statutory nuisance is being created in a house which is outwith the tenuous "10x blade diameter guide". As Pan 45 has been revoked we are left with the very limited two paragraphs of Scottish Government guidance in "Onshore Wind Turbines" which set no objective criteria but say;

"Where this could be a problem, developers should provide calculations to quantify the effect. In most cases however, where separation is provided between wind turbines and nearby dwellings (as a general rule 10 rotor diameters), "shadow flicker" should not be a problem.

However, there is scope to vary layout / reduce the height of turbines in extreme cases."

Severe rotor flicker has been witnessed by investigating officers but given the variable contributory factors, number and relative heights of rotors and affected houses; weather including frequency of clear sunny weather, wind speed and direction; relative height of the sun in the sky etc. an assessment will require to be carried out over one or more very lengthy periods when the problem is encountered.

Computer programmes are available to predict flicker and as we already know that the 10 x rotor diameter is not foolproof it may be appropriate to require, in every case, that appropriate

calculations are submitted with every application.

Given the information provided it is not possible for this service to comment further.

Environment and Enforcement

No Comments

1. The level of noise emissions from the wind turbines when measured at any dwelling, lawfully existing at the date of permission shall not exceed:

   a. between the hours of 23:00 and 07:00 the greater of 43dB L_A90 (10 min) or 5dB(A) above the Night Hours Background Noise level at that property; or

   b. between the hours of 07:00 and 23:00 the greater of 40dB L_A90 ((10 min) or 5 dB(A) above the quiet Waking Hours Day Time Background Noise Level at that property.

Reason: To protect the amenities of occupiers of premises from unreasonable noise and vibration levels.

Recommended Advisory Notes
It is strongly recommended that the undernoted Advisory Notes be placed on any consent the Council may grant: i. The applicant should be fully aware of the **Construction (Design & Management) Regulations 2007 (CDM 2007)** and it's implications on client duties etc.

Defence Infrastructure Organisation

Kalie Jagpal
Assistant Safeguarding Officer
Ministry of Defence
Safeguarding – Wind Energy
Kingston Road
Sutton Coldfield
West Midlands B75 7RL
United Kingdom

Telephone [MOD]: +44 (0)121 311 3674
Facsimile [MOD]: +44 (0)121 3112218
E-mail: DIOODC-IPSSG2a2@mod.uk

Your Reference: 14/0004/IC

Our Reference: 19798

Mr Guy Phillips
Inverclyde Council

06/01/2014

Dear Mr Philips

Please quote in any correspondence: 19798

Site Name: Land Southwest of Auchentiber Bridge

Proposal: Erection of 1 Wind Turbine

Planning Application Number: 14/0004/IC

Site Address: Auchenfoyle

Thank you for consulting the MOD about the above planning application in your correspondence dated 17/01/2014. I write to advise you that the MOD has no objections to the proposed development

The application is for 1 turbine at 70 metres to blade tip. This has been assessed using the grid reference below as submitted in the planning application or in the developers' pro-forma.

Turbine	100km Square	Easting	Northing
1	NS	31595	71497

The principal safeguarding concern of the MOD with respect to the development of wind turbines relates to their potential to create a physical obstruction to air traffic movements and cause interference to Air Traffic Control and Air Defence radar installations.

Defence Infrastructure Organisation Safeguarding wishes to be consulted and notified of the progression of planning applications and submissions relating to this proposal to verify that it will not adversely affect defence interests.

If planning permission is granted we would like to be advised of the following;

- the date construction starts and ends;
- the maximum height of construction equipment;
- the latitude and longitude of every turbine.

This information is vital as it will be plotted on flying charts to make sure that military aircraft avoid this area.

If the application is altered in any way we must be consulted again as even the slightest change could unacceptably affect us.

I hope this adequately explains our position on the matter. If you require further information or would like to discuss this matter further please do not hesitate to contact me.

Further information about the effects of wind turbines on MOD interests can be obtained from the following websites:

***MOD*:** http://www.mod.uk/DefenceInternet/MicroSite/DIO/WhatWeDo/Operations/ModSafeguarding.htm

Yours sincerely

Kalie Jagpal
Assistant Safeguarding Officer
Defence Infrastructure Organisation

SAFEGUARDING SOLUTIONS TO DEFENCE NEEDS

GLASGOW AIRPORT
PROUD TO SERVE SCOTLAND

FAO Guy Phillips
Inverclyde Council
By Email

25 February 2014

Dear Guy Phillips

Re: 14/0004/IC Erection of wind turbine 70m tip, 44m hub and associated infrastructure at Auchentiber Bridge
Our reference: GLA2840

I refer to your consultation request received in this office on 17th January 2014.

The proposed development has been examined from an aerodrome safeguarding perspective and does not conflict with safeguarding criteria. We, therefore, have no objection to this proposal.

Yours sincerely

Kirsteen MacDonald

Safeguarding Manager
Glasgow Airport
0141 842 7960
Kirsteen_MacDonald@glasgowairport.com

Guy Phillips

From: Janet Stitt
Sent: 05 March 2014 08:00
To: Guy Phillips
Cc: Jim Blair
Subject: FW: 14/0004/IC Proposed Wind Turbine At Auchentiber Bridge
Attachments: SKMBT_C25214021816380.pdf

Guy
We're fine with this one.

From: Jim Blair
Sent: 24 February 2014 11:38
To: Janet Stitt
Cc: Guy Phillips
Subject: FW: 14/0004/IC Proposed Wind Turbine At Auchentiber Bridge

Janet,
I think you did this one. Can we have a word. Jim

From: Guy Phillips
Sent: 18 February 2014 15:41
To: Jim Blair
Subject: 14/0004/IC Proposed Wind Turbine At Auchentiber Bridge

Jim,

To pick up on your comments on shadow flicker, have you had sight of the attached extract from the environmental report?

Are you content with the modelling as portrayed?

Guy Phillips
Senior Town Planner
Inverclyde Council
Dept Of Regeneration & Planning
Municipal Buildings
Clyde Square
Greenock
PA15 1LY

01475 712422

REPRESENTATIONS

Personal Details

First Name	Nigel
Surname	Willis for Save Your Regional Park campaign
Address 1	Nervelstone
Address 2	
Address 3	
Town/City	Lochwinnoch
PostCode	PA12 4DS
Tel. No.	
Email Address	

Your Comments

Application Ref.	14/0004/IC
Address	Land Southwest Of Auchentiber Bridge Auchenfoyle
Stance	Object
Comments	This is on behalf of the Save Your Regional Park campaign. Please note that we object to this development on the grounds of cumulative impact with the proposed Inverclyde Windfarm in Clyde Muirshiel Regional Park and the other "small" turbines already approved in the neighbouring area just outside Clyde Muirshiel Regional Park. This is a purely commercial proposal with any power generated being sold to the Grid and not used by the farm.

The Haven Kilmacolm
Horsecraigs
Kilmacolm
Inverclyde PA13 4TH
Tel: 01505 872099
Fax: 01505 871987
Email: info@thehavenkilmacolm.com
Web: www.thehavenkilmacolm.com

Head of Regeneration and Planning,
Inverclyde Council,
Regeneration and Planning Department,
Municipal Buildings,
Clyde Square,
Greenock,
PA15 1LY

5th February 2014

Application Reference: 14/0004/IC - Erection of a single wind turbine 70m tip, 44m hub and associated infrastructure at Land Southwest of Auchentiber Bridge, Auchenfoyle

Dear Sir/Madam,

The Haven would like to express support for the development of a single wind turbine at Land Southwest of Auchentiber Bridge made by Mr John Dunn.

In September last year we were approached by VG Energy, the developers of this proposal. During discussions we were advised that as part of the proposal, a Community Fund would be set up to spread the benefit of the development to the wider community. The applicant and his family have chosen The Haven as a beneficiary of this fund, to which we would be extremely grateful. This fund will help allow The Haven to carry on its worthwhile work and ensure the continued support made available to those in need.

In addition to this, as one of the nearest properties to the development, we would stress our support for the installation of a renewable energy project at its proposed location. This development, unlike the others recently consented, will directly benefit the local and wider community.

Please accept this letter as a representation of our support for this proposed development.

Yours sincerely,

David Black
(Chairman)

A safe place to be

KILMACOLM CIVIC TRUST
(Scottish Charity No SC 032744)

From:
Mr RN Cameron
Chairman Kilmacolm Civic Trust

Kaladan
Lochwinnoch Road
Kilmacolm
PA13 4DY

Mr S Jamieson
Head of Regeneration and Planning
Inverclyde Council
Municipal Buildings
Greenock PA15 1LX

7th February 2014

Dear Mr Jamieson

OBJECTION TO PLANNING APPLICATION 14/0004/IC:
(Installation of 70m high Wind Turbine near Auchentiber Bridge)

The Kilmacolm Civic Trust Executive Committee has considered Application 14/0004/IC **and wish to object.**

We note that the application has been submitted by a Mr John Dunn of Burnside Farm, Langbank. The buildings associated with that farm are very close to the South entry gate for the driveway leading down to Finlaystone House from the Old Greenock Road. The entryway to the Burnside farm buildings is only 300m from that Finlaystone House gateway. The output from the proposed turbine will make only an infinitesimal contribution to the National Grid. We do not see how electricity generated by the proposed turbine Southwest of Auchentiber Bridge can be utilised at the farm buildings 4.5km away at Burnside Farm.

We note from the VG Energy Environment Report that it is proposed to invest the income from the turbine near Auchentiber Bridge into the farm to improve the land they own:

'The applicant owns the land at Auchentiber Bridge, which has been in the family for over 70 years. The farming business was a much larger outfit in previous years; however the site which is currently farmed is approximately 68 acres. Both the applicant and his wife work the land, which is grazed by 150 sheep; no workers are employed at the site.
As outlined in the EC Council Regulation 1782/2003 governing single farm payments, Mr Dunn has participated in agri-environment schemes to ensure natural habitats, native wildlife and woodlands flourish. The scheme encourages the maintenance and deployment of grass margins, species rich grass, whilst managing hedges to provide habitats for wildlife. Mr Dunn wishes to continue to encourage environmentally friendly practices through his participation in the scheme. The applicant has identified wind farming as a diversification opportunity that will provide an income for the farm, independent of the fluctuations in farm prices whilst significantly reducing its carbon footprint. Mr Dunn has expressed a wish to invest the income from this turbine development into the farm, enhancing the land by draining and reseeding the fields. Mr Dunn would also like to lay new hedges and plant a selection of hardwood trees on the farm. The applicant wishes to improve the land which they own, and ensure that the farm remains within the family for the third generation. The income generated from this turbine development will enable this to happen for the Dunn family'.

We note that the applicants wish to set up a Community Benefit Scheme and that they wish the beneficiaries to be the Charity 'The Haven':

'The Haven has expressed great appreciation, and has advised that the funds made available to them through the development at Auchentiber Bridge, would ensure their operation for the future. The financial support provided by the Scheme would allow them to accept and offer counselling to increased numbers of young men with addictions, providing them with the opportunity to reintegrate back into community post-treatment. The proposed turbine development at

Auchentiber Bridge will allow a Community Benefit Scheme to be established, which in turn will provide support for The Haven for each year of its operation. As such, the development will support both employment and charity within the local area, along with a number of vulnerable individuals utilising The Haven.

OUR OBJECTION

As with our objection to the applications to erect the single 67m high turbine at High Mathernock Farm (approved by Reporter on Appeal), then a single 53.71m high turbine at Cairncurran Farm (Approved by Review Board on Appeal), then 2 x 67m high wind turbines on the high ground above Priestside Farm (Approved by Review Board on Appeal), and the application for a single 74m high wind turbine for High Auchenleck Farm (outcome yet to be determined by Inverclyde Council) – **a total of 5 turbines (if the High Auchenleck turbine is Approved)** in a relatively small geographical area, there are 3 key issues:

- The visual impact
- The Cumulative Impact
- The effects on 'people' i.e the residents of nearby properties.

Visual Impact

We note from the VG Energy Environment Report that

'The proposal has been amended from a 65m turbine to a single 70m turbine, as it is strongly believed that the development would generate less of an impact if the typology of turbine matched that consented at High Mathernock Farm. By matching the typology of turbine, the visual clutter of turbines in the local landscape is reduced, consequently resulting in the reduced impact of the overall development.

When we objected to the High Mathernock turbine we pointed out that it would add to the unsightly clutter of the two 132kV and 400kV high voltage power supply lines and associated pylons that already despoil the head of the Gryfe Water Valley.

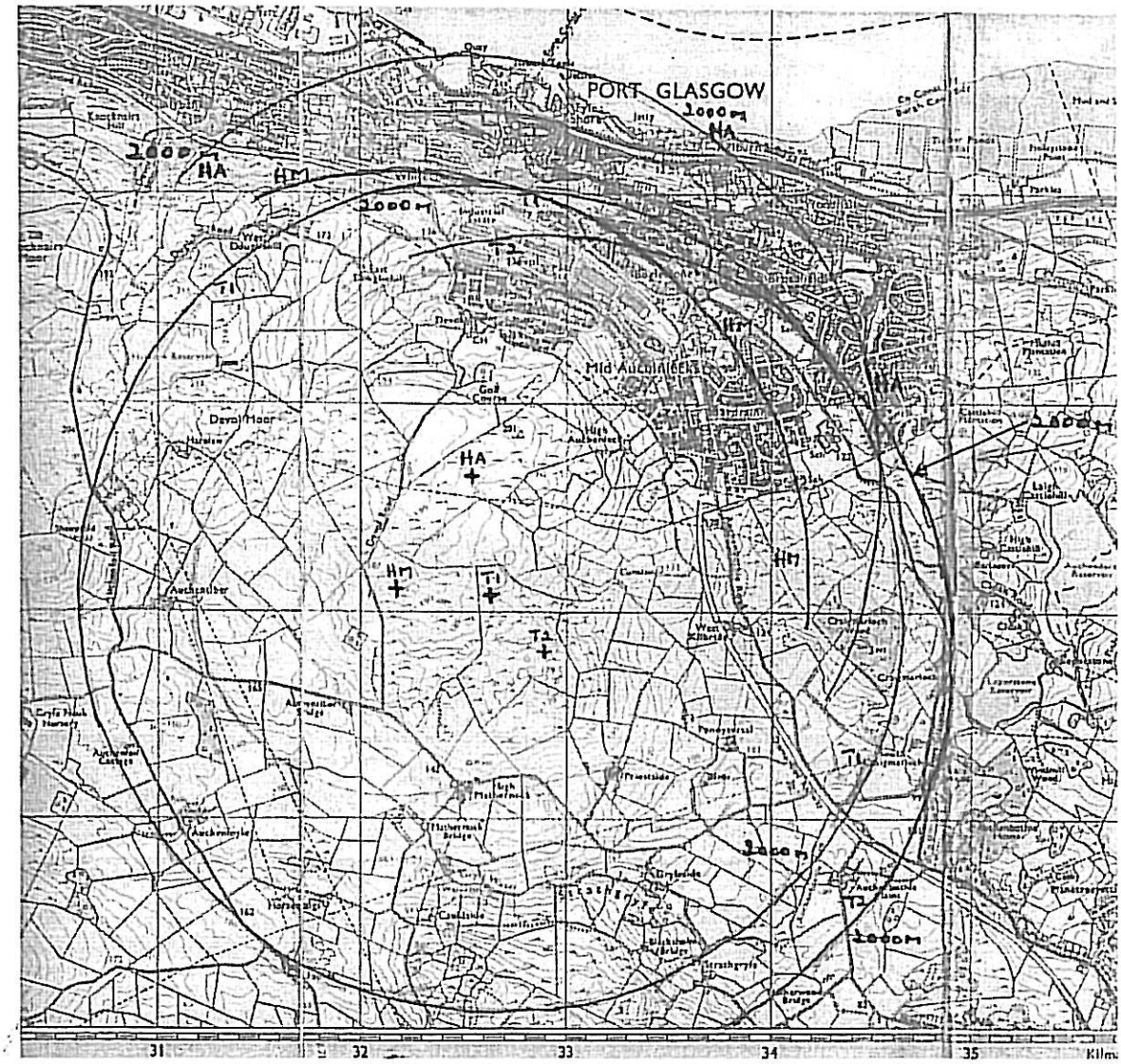
We also warned that it would encourage further applications for wind turbines in the Ward 1 area, leading to wind turbine development 'creep' and in due course the creation of wind turbine farms by default. **This is now happening.**

We draw your attention to the marked map below which indicates the proximities of properties in Upper Port Glasgow to the turbines. The base plates are marked

+HA (74m High Auchenleck turbine);
+T1 and **+T2** (the pair of 67m Priestside turbines);
+HM (the 67m High Mathernock turbine).

The 2000m radii (Scottish Government recommended minimum distance to housing) from these turbines are marked **2000m HA**; **2000m T1**; **2000m T2**; and **2000m HA** respectively.
Note the following locations:

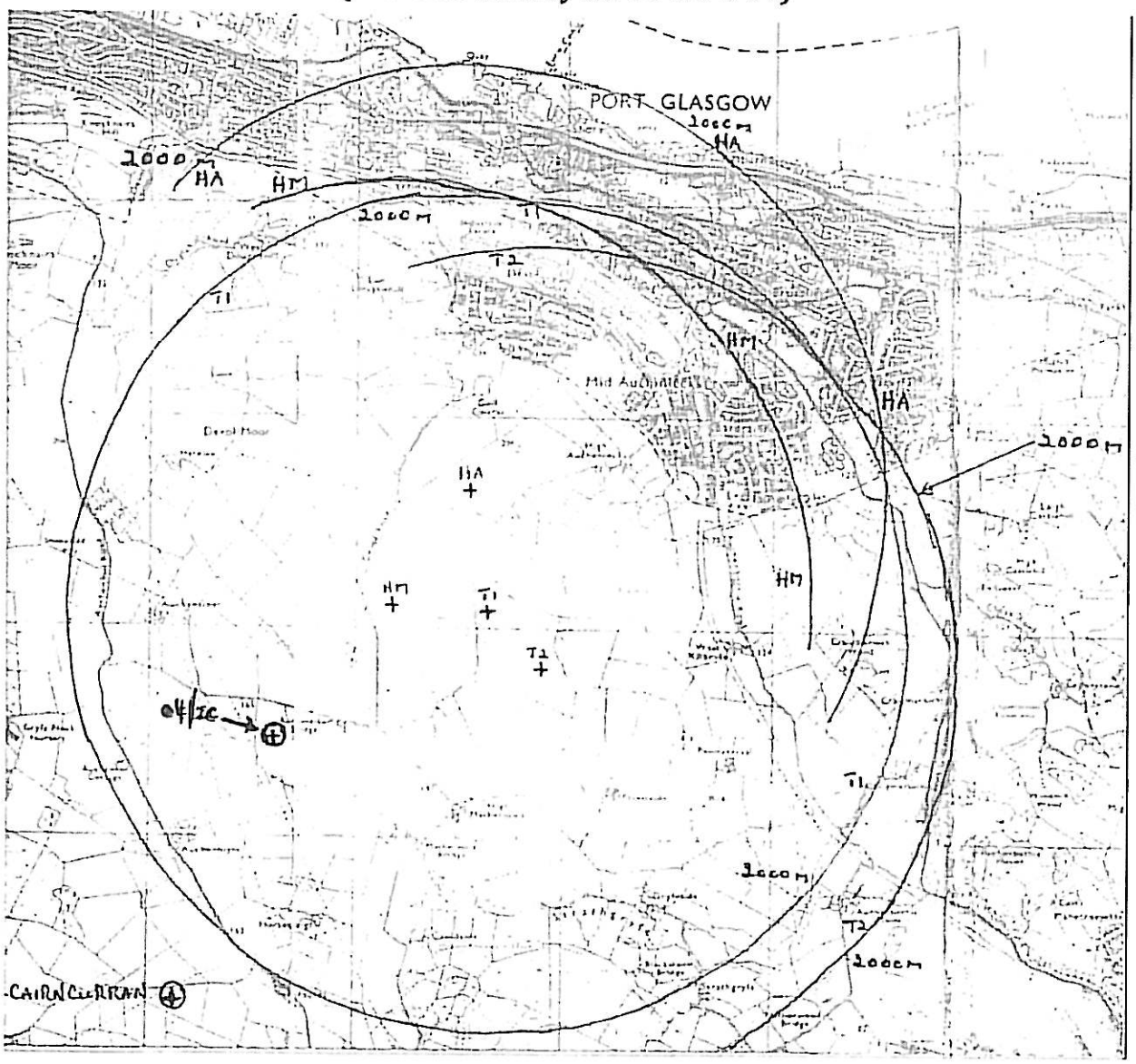
- Devol electricity substation (marked in yellow);
- Devol Moor;
- Upper Bardrainney housing estate;
- The 4 campus school site;
- Park Farm housing estate;
- The properties Cunston and West Kilbride;
- The Auchenbothie House development.



Immediate Cumulative Impact

We now have this new application for a 70m High turbine near Auchentiber Bridge. This, in conjunction with the 4 turbines just discussed above, will make a clutch of 5 turbines in a small (1000 x 1000m) area between the B788 (Auchenfoil Road) and Auchenbothie Road; in effect a small windfarm. The consented 53.71m high turbine at Cairncurran Farm makes a total of 6 turbines in a slightly larger area.

See the map below for the locations of all 6 turbines: the 4 in the map above, plus the Auchentiber Bridge turbine – marked **+04/IC** , plus the Cairncurran Farm turbine, marked **+Cairncurran.**



The Potential Overall Cumulative Impact

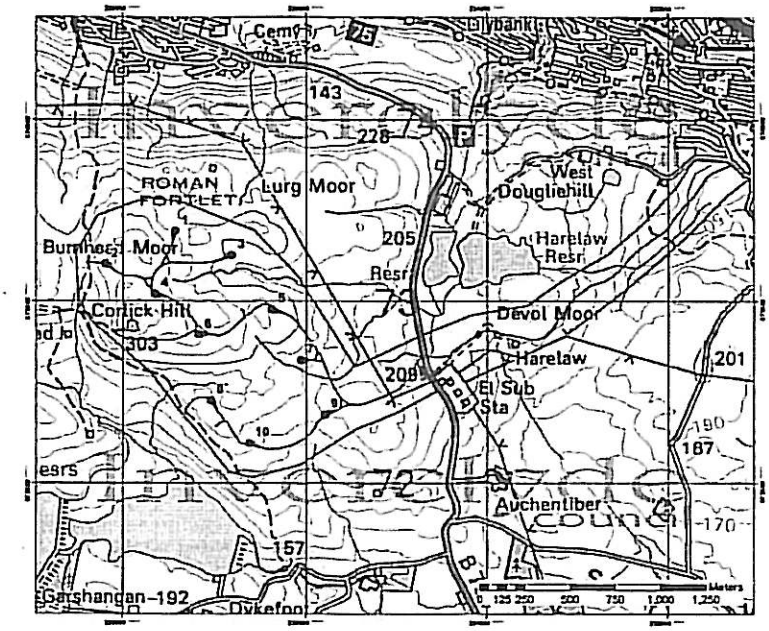
In our position paper on wind turbines in 2010 we expressed concern at the prospect of a proliferation of unrelated private turbines and the disproportionate disruptive impact that they would have on the landscape.

The combined effects from the High Mathernock, Priestside and High Auchenleck turbines will be an overlap of visual impact along with the effects of noise, infrasound and amplitude modulation which will be carried principally towards the Upper Bardrainney and Park Farm housing estates - the prevailing wind being predominantly from the west/southwest.
This Auchentiber Bridge application therefore needs to be seen in the context of an ever developing cluster. Should a further (and in our opinion, highly probable) turbine application be submitted (e.g by the farm known as Auchentiber, slightly to the northwest, near the Devol electricity substation, or by the farm

Auchenfoyle, slightly to the southwest, this would add to the already enlarging cluster and exacerbate the various effects – in particular on the isolated houses and farm dwellings in those areas.
On top of this developing cluster on the high ground to the **East** of the B788, there is the recent application now being processed, to erect 10 x 110m high turbines just to the **West** of the B788 at Corlic Hill.

If the High Auchenleck, Auchentiber Bridge and then Corlic Hill applications were to be approved (followed probably by Auchentiber Farm, or some other application in the same geographical area) the outcome would be two significant windfarms approx 2km apart, introducing even greater visual intrusion and despoliation of the upper Gryffe Valley/Devol Moor area and further increasing the impact of noise, infrasound and amplitude modulation on residences within 2000m (recently extended to 2500m by the Scottish Government) from each of the windfarms. See the 2 maps that follow:

The Potential Corlic Hill Development
(note the location of Auchentiber Farm)

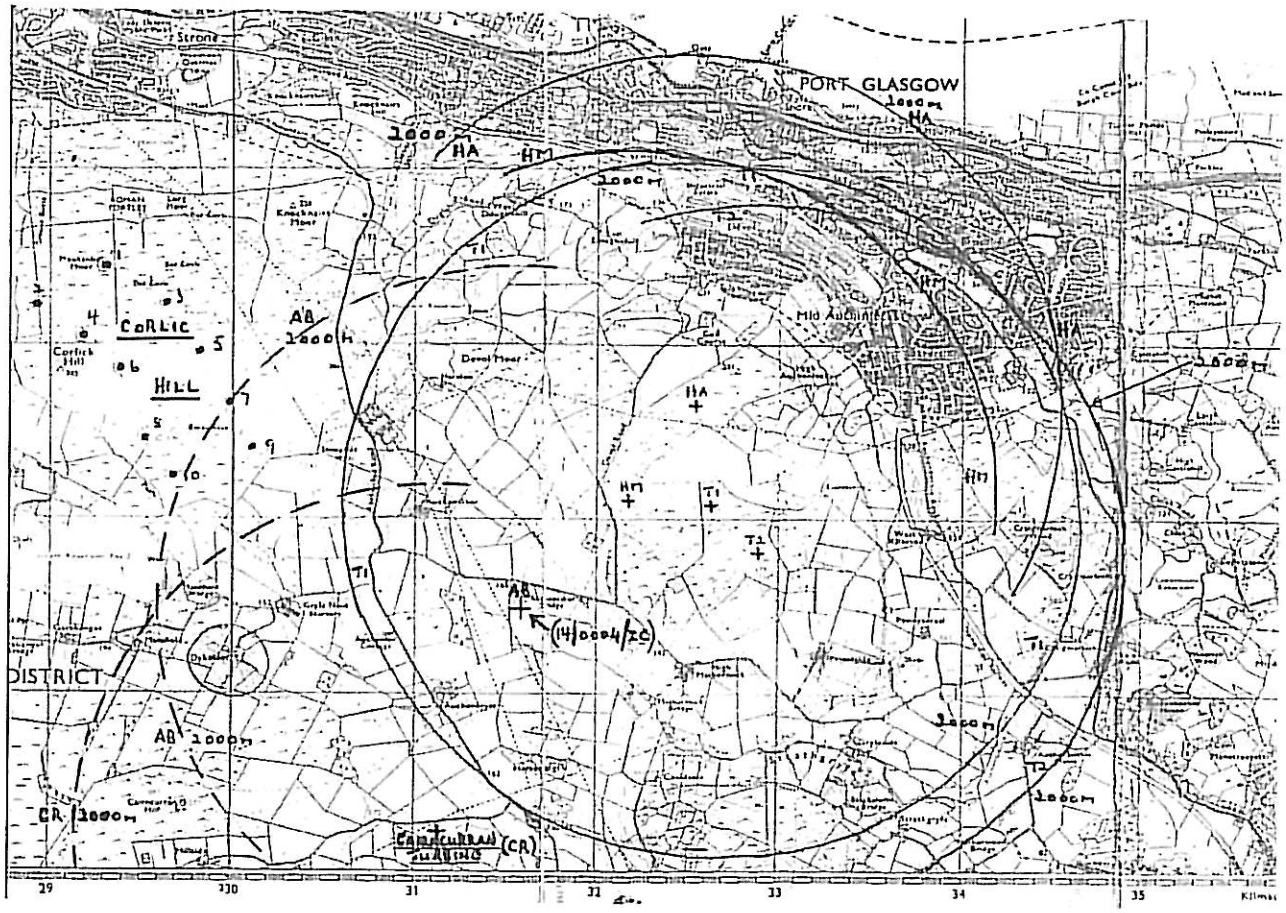


The Potential 2 x windfarms outcome (see map on page 6)
(10 turbines at Corlic Hill, west of the B788; and a 6(+) turbines cluster east of the B788)

Note the Auchenfoil Rd (the B788) leading to/from Greenock & Devol Road

Note the numerous isolated houses and farm dwellings in the countryside in the left half of the map that fall within the 2000m radii of turbines **T1, HM, AB and CR** (Auchentiber, Auchenfoyle Cottages, Auchenfoyle,

Horsecraigs, Gryffe Neuk Nursery (there are 4 properties in this area), Dykefoot, Mansfield, Hillside (2 x properties), and Faulds). Not only would the effects of these 4 turbines impact on their well being; if the Corlic Hill application for 10 x 110m turbines were to be approved most of these same properties would also suffer from the combined effects of Corlic Hill turbines 5 to 10.



In Conclusion

As a result of considering applications on a piecemeal, case by case basis we now have turbine 'creep' developing on the Devol Moor/Priestside/High Auchenleck high ground, leading to a proliferation of wind turbines. We already have turbine applications consented for: (1) High Mathernock Farm. (2) Cairncurran Farm. (3) Priestside Farm. If the High Auchenleck and Auchentiber Bridge applications are approved there

is a high probability that this would encourage more applications for private turbines in this general area. The contribution that these turbines make towards Scotland's energy needs is miniscule. They are being applied for to take financial advantage of Feed-in Tariffs; not for altruistic carbon reduction reasons. On top of these there is the 10 x 110m high Corlic Hill application. Scottish Government policy being what it is, the Corlic Hill wind farm will probably be ultimately approved and the outcome will be 16 turbines on the ridge extending from Corlic Hill in the west to Craigmarloch Wood in the East .

Yours Sincerely,

Nicol Cameron

R.N. Cameron
(Chairman Kilmacolm Civic Trust)

Personal Details

First Name	Paula
Surname	Morrison
Address 1	120 Banff
Address 2	
Address 3	
Town/City	Greenock
PostCode	PA16 0EN
Tel. No.	
Email Address	

Your Comments

Application Ref.	14/0004/IC
Address	Auchentiber Bridge
Stance	Object
Comments	I am writing to express concern with this application. In recent years Scotland has become inundated with wind turbines and I simply believe there is no need for any more. As such, i strongly object to this development.

Personal Details	
First Name	Steven
Surname	Harvey
Address 1	11 Taymouth Drive
Address 2	
Address 3	
Town/City	Gourock
PostCode	PA191HJ
Tel. No.	
Email Address	

Your Comments	
Application Ref.	14/0004/IC
Address	Land southwest of Auchentiber Bridge, PA13 4TL
Stance	Object
Comments	I strongly object to this planning application.

Personal Details

First Name	Lauren
Surname	Porter
Address 1	4 Juno Lane
Address 2	
Address 3	
Town/City	Greenock
PostCode	pa16 0qu
Tel. No.	
Email Address	

Your Comments

Application Ref.	14/0004/IC
Address	PA13 4TL
Stance	Object
Comments	To whom it may concern, I object to this turbine application as the area does not need to be spoiled by unsightly features. I do not think they are beneficial in tackling climate change. All they do is spoil the natural scenery of Scotland. Regards Miss Porter

Personal Details

First Name	Julie
Surname	MacDonald
Address 1	19 Pembroke Road
Address 2	
Address 3	
Town/City	Greenock
PostCode	PA160JP
Tel. No.	
Email Address	

Your Comments

Application Ref.	14/0004/IC
Address	Auchentiber Bridge
Stance	Object
Comments	I write in connection with the above planning application. I have examined the plans and I know the site well. I wish to object strongly to the development of this wind turbine.

Personal Details

First Name	Aimee
Surname	Buchanan
Address 1	24 Station Road
Address 2	
Address 3	
Town/City	Killearn
PostCode	G639NU
Tel. No.	
Email Address	

Your Comments

Application Ref.	14/0004/IC
Address	PA13 4TL
Stance	Object
Comments	Planning Department, I trust that you will take into account this objection regarding this application. I have family members which live close by and they do not need the hassle of a noisy development near by. I believe that wind turbines are very dangerous and that they can affect the health of those living close. As such, I strongly recommend the refusal of this development. Regards Aimee Buchanan

Personal Details	
First Name	Kilmacolm Community Council
Surname	Helen MacConnacher
Address 1	Farnham
Address 2	Gibson Lane
Address 3	
Town/City	Kilmacolm
PostCode	PA13 4EP
Tel. No.	
Email Address	

Your Comments	
Application Ref.	14/0004/IC
Address	Auchenfoyle
Stance	Object
Comments	Dear Mr Phillips, KCC wishes to object to this proposal on the following grounds; A precedent for other large scale developments would be set if this wind turbine is approved. There would be damage to visual impact of the surrounding area. Kind regards Helen MacConnacher

Personal Details

First Name	John
Surname	Dunn
Address 1	Burnside Farm Cottage
Address 2	
Address 3	
Town/City	Langbank
PostCode	PA14 6TN
Tel. No.	
Email Address	

Your Comments

Application Ref.	14/0004/IC
Address	Land Southwest of Auchentiber Bridge Auchenfoyle
Stance	Support

Dear Sir/Madam,

INVERCLYDE PLANNING APPLICATION REF 14/0004/IC

I am writing to express my support for the above application at the land Southwest of Auchentiber Bridge, Auchenfoyle. This winter has brought record-breaking rainfall with Britain enduring its wettest winter since record began in 1910. Climate records are being broken around the world. The strong scientific consensus is that human activity, in particular emissions of carbon dioxide, is the primary driver of this. Wind energy is clean, safe, reliable and less expensive than anything except shale gas, which has unpredictable future costs. In this context this application is important as it provides a renewable, low carbon energy development while ensuring that possible adverse impacts are negated.

I strongly believe that this one turbine will not in any way detract from its surroundings. The suggested position means that it will have no impact in terms of noise and not be an eyesore or in any way destroy the landscape. There will be no adverse impact on the local economy or cultural heritage. If, in coming years, new technologies emerge that are superior to the highly efficient turbine, or when it comes to the end of its life-cycle, it will be taken down, and all that remains will be a small concrete pad, which will become part of our local history.

Comments

This site is ideal for several reasons:

1.It is a suitable distance from residential properties; residential amenity would be completely protected.
2.It is outside of protected landscape areas.
3.It is outside of protected wildlife areas.
4.It has good wind speed.

On a personal level I run a small family farming business. My family has farmed at Burnside for 80 years. Currently we own a small flock of sheep. We rent some land for this purpose although over the last few years most has been taken back by the landlord for the purpose of tree planting. The revenue generated from the turbine would enable us renew fences, drain land and continue farming on the small acreage we own.

I thank you for taking the time to read this and consider our application.

Yours faithfully,

John Dunn

DECISION NOTICE DATED 17 MARCH 2014

DECISION NOTICE

Refusal of Planning Permission
Issued under Delegated Powers

Inverclyde council

Regeneration and Planning
Municipal Buildings
Clyde Square
Greenock PA15 1LY

Planning Ref: 14/0004/IC

TOWN AND COUNTRY PLANNING (SCOTLAND) ACT 1997
TOWN AND COUNTRY PLANNING (DEVELOPMENT MANAGEMENT PROCEDURE) (SCOTLAND)REGULATIONS 2013

Mr John Dunn
Burnside Farm
Langbank
PA14 6TN

VG Energy Ltd
Bethan Lewis
Waterside Farm
Glasgow Road
GALSTON
KA4 8PB

With reference to your application dated 23rd December 2013 for planning permission under the above mentioned Act and Regulation for the following development:-

Erection of a single wind turbine 70m high to blade tip and associated infrastructure at

Land South-West of Auchentiber Bridge, Auchenfoyle, Auchentiber Road by Port Glasgow

Category of Application: Local Application Development

The INVERCLYDE COUNCIL in exercise of their powers under the abovementioned Act and Regulation hereby refuse planning permission for the said development.

The reason for the Council's decision is:-

A combination of height, scale and prominence within this part of Inverclyde's countryside, proximity to three approved wind turbines and proximity to the core footpath network create an unexpected and dominant cluster of engineered structures detrimental to visual amenity and enjoyment of the countryside and contrary to:-

a. Policy UT6 of the Inverclyde Local Plan, criteria (a), (b), (c) and (d)
b. Interim Inverclyde Local Plan Policy UT6B, criteria (a) and (f)
c. Proposed Local Development Plan Policy INF1 criteria (b), (d) and (i)
d. Local Plan policy LR6.

The reason why the Council made this decision is explained in the attached Report of Handling.

Dated this 17th day of March 2014

Head of Regeneration and Planning

Healthy Working Lives

Positive About Disabled People

1 If the applicant is aggrieved by the decision of the Planning Authority to refuse permission for or approval required by condition in respect of the proposed development, or to grant permission or approval subject to conditions, he may seek a review of the decision within three months beginning with the date of this notice. The request for review shall be addressed to The Head of Legal and Administration, Inverclyde Council, Municipal Buildings, Greenock,PA15 1LY.

2 If permission to develop land is refused or granted subject to conditions, and the owner of the land claims that the land has become incapable of reasonably beneficial use in its existing state and cannot be rendered capable of reasonably beneficial use by the carrying out of any development which has been or would be permitted, he may serve on the planning authority a purchase notice requiring the purchase of his interest in the land in accordance with Part 5 of the Town and Country Planning (Scotland) Act 1997

Refused Plans: Can be viewed Online at http://planning.inverclyde.gov.uk/Online/

Drawing No:	Version:	Dated:
WV1072/001/B		19.12.2013
WV1072/038/A		12.12.2013
WV1072/039/A		12.12.2013
WV1072/005/A		29.08.2013
WV1072/037/A		12.12.2013
WV1072/036/A		12.12.2013

NOTICE OF REVIEW FORM DATED 3 JUNE 2014

Inverclyde council

Municipal Buildings Clyde Square Greenock PA15 1LY

Tel: 01475 712 406

Fax: 01475 712 468

Email: planning.dlm@inverclyde.gov.uk

Applications cannot be validated until all necessary documentation has been submitted and the required fee has been paid.

Thank you for completing this application form:

ONLINE REFERENCE 000091661-001

The online ref number is the unique reference for your online form only. The Planning Authority will allocate an Application Number when your form is validated. Please quote this reference if you need to contact the Planning Authority about this application.

Applicant or Agent Details

Are you an applicant, or an agent? * (An agent is an architect, consultant or someone else acting on behalf of the applicant in connection with this application) ☐ Applicant ☑ Agent

Agent Details

Please enter Agent details

Company/Organisation:	VG Energy Ltd
Ref. Number:	
First Name: *	Bethan
Last Name: *	Lewis
Telephone Number: *	01563829999
Extension Number:	
Mobile Number:	
Fax Number:	
Email Address: *	bethan.lewis@vgenergy.co.uk

You must enter a Building Name or Number, or both:*

Building Name:	Waterside Farm
Building Number:	
Address 1 (Street): *	Glasgow Road
Address 2:	
Town/City: *	Galston
Country: *	UK
Postcode: *	KA4 8PB

Is the applicant an individual or an organisation/corporate entity? *

☑ Individual ☐ Organisation/Corporate entity

Applicant Details

Please enter Applicant details

Title: *	Mr	You must enter a Building Name or Number, or both:*	
Other Title:		Building Name:	Burnside Farm
First Name: *	John	Building Number:	
Last Name: *	Dunn	Address 1 (Street): *	Burnside Farm
Company/Organisation:		Address 2:	
Telephone Number:		Town/City: *	Langbank
Extension Number:		Country: *	Scotland
Mobile Number:		Postcode: *	PA14 6TN
Fax Number:			
Email Address:			

Site Address Details

Planning Authority: Inverclyde Council

Full postal address of the site (including postcode where available):

Address 1:		Address 5:	
Address 2:		Town/City/Settlement:	
Address 3:		Post Code:	
Address 4:			

Please identify/describe the location of the site or sites.

Open farmland southwest of Auchentiber Bridge, Auchenfoyle, Inverclyde (nearest postcode PA13 4TL)

Northing	671497	Easting	231595

Description of the Proposal

Please provide a description of the proposal to which your review relates. The description should be the same as given in the application form, or as amended with the agreement of the planning authority: *
(Max 500 characters)

Erection of a single wind turbine (70m tip, 44m hub) and associated infrastructure at Land Southwest of Auchentiber Bridge (Turbine Co-ordinates E:231595 N:671497)

Type of Application

What type of application did you submit to the planning authority? *

☑ Application for planning permission (including householder application but excluding application to work minerals).

☐ Application for planning permission in principle.

☐ Further application.

☐ Application for approval of matters specified in conditions.

What does your review relate to? *

☑ Refusal Notice.

☐ Grant of permission with Conditions imposed.

☐ No decision reached within the prescribed period (two months after validation date or any agreed extension) – deemed refusal.

Statement of reasons for seeking review

You must state in full, why you are seeking a review of the planning authority's decision (or failure to make a decision). Your statement must set out all matters you consider require to be taken into account in determining your review. If necessary this can be provided as a separate document in the 'Supporting Documents' section: * (Max 500 characters)

Note: you are unlikely to have a further opportunity to add to your statement of appeal at a later date, so it is essential that you produce all of the information you want the decision-maker to take into account.

You should not however raise any new matter which was not before the planning authority at the time it decided your application (or at the time of expiry of the period of determination), unless you can demonstrate that the new matter could not have been raised before that time or that it not being raised before that time is a consequence of exceptional circumstances.

Please see attached "Planning Permission Appeal Statement".

Have you raised any matters which were not before the appointed officer at the time the determination on your application was made? * ☐ Yes ☑ No

Please provide a list of all supporting documents, materials and evidence which you wish to submit with your notice of review and intend to rely on in support of your review. You can attach these documents electronically later in the process: * (Max 500 characters)

Completed Planning Application Form (submitted to Inverclyde Council)
Environmental Report for a Wind Turbine development at Land southwest of Auchentiber Bridge and Associated Appendix Documents
Planning Permission Appeal Statement
Councils Decision Notice and Handling Report

Application Details

Please provide details of the application and decision.

What is the application reference number? * 14/0004/IC

What date was the application submitted to the planning authority? * 16/01/14

What date was the decision issued by the planning authority? * 17/03/14

Review Procedure

The Local Review Body will decide on the procedure to be used to determine your review and may at any time during the review process require that further information or representations be made to enable them to determine the review. Further information may be required by one or a combination of procedures, such as: written submissions; the holding of one or more hearing sessions and/or inspecting the land which is the subject of the review case.

Can this review continue to a conclusion, in your opinion, based on a review of the relevant information provided by yourself and other parties only, without any further procedures? For example, written submission, hearing session, site inspection. *

☐ Yes ☑ No

Please indicate what procedure (or combination of procedures) you think is most appropriate for the handling of your review. You may select more than one option if you wish the review to be conducted by a combination of procedures.

Please select a further procedure *

Inspection of the land subject of the appeal. (Further details below are not required)

Please explain in detail in your own words why this further procedure is required and the matters set out in your statement of appeal it will deal with? * (Max 500 characters)

To appreciate the setting of the site and the surrounding area.

In the event that the Local Review Body appointed to consider your application decides to inspect the site, in your opinion:

Can the site be clearly seen from a road or public land? * ☑ Yes ☐ No

Is it possible for the site to be accessed safely and without barriers to entry? * ☑ Yes ☐ No

Checklist - Application for Notice of Review

Please complete the following checklist to make sure you have provided all the necessary information in support of your appeal. Failure to submit all this information may result in your appeal being deemed invalid.

Have you provided the name and address of the applicant? * ☑ Yes ☐ No

Have you provided the date and reference number of the application which is the subject of this review? * ☑ Yes ☐ No

If you are the agent, acting on behalf of the applicant, have you provided details of your name and address and indicated whether any notice or correspondence required in connection with the review should be sent to you or the applicant? *

☑ Yes ☐ No ☐ N/A

Have you provided a statement setting out your reasons for requiring a review and by what procedure (or combination of procedures) you wish the review to be conducted? * ☑ Yes ☐ No

Note: You must state, in full, why you are seeking a review on your application. Your statement must set out all matters you consider require to be taken into account in determining your review. You may not have a further opportunity to add to your statement of review at a later date. It is therefore essential that you submit with your notice of review, all necessary information and evidence that you rely on and wish the Local Review Body to consider as part of your review.

Please attach a copy of all documents, material and evidence which you intend to rely on (e.g. plans and drawings) which are now the subject of this review * ☑ Yes ☐ No

Note: Where the review relates to a further application e.g. renewal of planning permission or modification, variation or removal of a planning condition or where it relates to an application for approval of matters specified in conditions, it is advisable to provide the application reference number, approved plans and decision notice (if any) from the earlier consent.

Declare - Notice of Review

I/We the applicant/agent certify that this is an application for review on the grounds stated.

Declaration Name:	Bethan Lewis
Declaration Date:	03/06/2014
Submission Date:	03/06/2014

SUPPORTING DOCUMENTATION SUBMITTED WITH NOTICE OF REVIEW

Regeneration and **Planning**
Development Control & Conservation

Inverclyde council

Head of Regeneration and Planning
Municipal Buildings
Clyde Square
Greenock PA15 1LY

RECEIVED
2584

47

FOR OFFICIAL USE ONLY	
Reference No.	14/0004/IC
Date of Receipt	
Fee Paid	
Date Fee Received	
Date Valid	
Receipt No.	

PLANNING APPLICATION

Town & Country Planning (Scotland) Acts

The undernoted applicant hereby makes application for Planning Permission for the development described on this form and the accompanying plans.

see note 1

1. *Particulars of Applicant*	*Particulars of Agent (if any) acting on applicants behalf:*
Name Mr John Dunn	Name VG Energy Ltd (Bethan Lewis)
Address Burnside Farm, Langbank	Address Waterside Farm, Glasgow Road,
Postcode PA14 6TN	Galston Postcode KA4 8PB
Telephone Number N/A	Telephone Number 01563 829999
	Profession Planning Consultant

see note 2

2. *Description of Development*

Erection of a single wind turbine (30m tip, 44m Hub) & associated infrastructure at land Southwest of Auchentiber Bridge

Site Location Turbine Co-ordinates = E: 231595 N: 671497

Site Area (hectares) 0.4640 Number of dwellinghouses proposed N/A

New gross floorspace (sq. metres N/A

see note 3

3. *Application Type* (Tick appropriate box/es)

(a) Permission in Principle	☐	(c) Detailed Permission	☑
(b) Approval of Matters specified by conditions	☐	(d) Change of Use of land/buildings	☐

(e) Other (please specify) .....

see note 4

4. *Applicants interest in site* (Tick appropriate box)

(a) Owner	☑	(c) Tenant	☐
(b) Lessee	☐	(d) Prospective Purchaser	☐

(e) Other (please specify) .....

Revision 'A' - November 2008
Revision 'B' - December 2008
Revision 'C' - July 2009
Revision 'D' - October 2009
Revision 'E' - December 2009
Revision 'F' - April 2010
Revision 'G' - May 2013

see note 5

5. *Existing Uses*

(a) Please state the existing use(s) of the land/buildings: open farmland

(b) Was the original building erected before 1st July 1948? N/A Yes / No

Has the original building been altered or extended N/A Yes / No

If yes, please indicate nature of alteration / extension and if possible approximate dates. N/A

If the land / buildings are vacant, please state last known use. N/A

see note 6

6. *Access Arrangements and Parking* (Tick appropriate box/es)

(a) Not Applicable	☐	(e) Number of existing on site parking places	☐
(b) New vehicular access proposed	☑	(f) Number of proposed on site parking places	☐
(c) Existing vehicular access to be altered / improved	☐	(g) Detail of any available off site parking	☐
(d) Separate pedestrian access proposed	☐		

see note 7

7. *Drainage Arrangements* (Tick appropriate box/es)

(a) Not Applicable	☑	(c) Connection to existing public sewer	☐
(b) Public Sewer	☐	(d) Septic Tank	☐

If (d), indicate method of disposal of effluent (e.g. soakaway, watercourse etc).....

see note 8

8. *Water Supply* (Tick appropriate box/es)

(a) Not Applicable	☑	(c) Existing private supply	☐
(b) Public Main	☐	(d) Proposed private supply	☐

If (c) or (d), please specify nature of supply source and proposed storage arrangements.....

see note 9

9. *Building Materials* (Complete as appropriate)

(a) Not Applicable	☑
(b) Outside Walls	Material..... Colour.....
(c) Roof Covering	Material..... Colour.....
(d) Windows	Material..... Colour.....
(e) Boundary Treatment	Material..... Colour.....

see note 10

10. Landscaping		
Is a landscaping/tree planting scheme proposed?	Yes ☐	No ☑
Are any trees/shrubs to be cleared on site?	Yes ☐	No ☑
If yes, please show details of scheme on a SITE PLAN		

see note 11

11. Costings	
What is the estimated costs of any works to be carried out?	£.....

see note12

12. Confirmation	
Signature of applicant/agent.....	
on behalf of..... Mr John Dunn	Date 20/12/2013

see note 13

CERTIFICATES UNDER ARTICLE 15 OF THE TOWN AND COUNTRY PLANNING (DEVELOPMENT MANAGEMENT PROCEDURE)(SCOTLAND) REGULATIONS 2008

Either certificate A, B or C must be completed together with certificate D

CERTIFICATE A (To be completed where the applicant is owner of the whole application site including any access visibility splays and land required for drainage systems or water connections)

I hereby certify that:

No person other than * ~~myself~~/the applicant was an owner (refer to note (a)) of any part of the land to which the application relates at the beginning of the period of 21 days ending with the date of the accompanying application

CERTIFICATE B (To be completed where the applicant does not own the whole application site including any access visibility splays and land required for drainage systems or water connections)

I further certify that:

* I have/the applicant has given the requisite notice (Notice No.1) to all persons other than * myself / the applicant who at the beginning of the period of 21 days ending with the date of the accompanying application were (refer to note (a)) owners of any part of the land to which the application relates.

Name(s) of Owner	Address(es)	Date of Service of Notice(s)
.....	.....	.....
.....	.....	.....
.....	.....	.....

* Delete whichever is inappropriate

NOTE (a) **Any person who in respect of any part of the land is the proprietor of the dominium utile or is the lessee under a lease thereof of which not less than 7 years remains unexpired.**

CERTIFICATE C (To be completed in EVERY CASE)

I further certify that:

* (1) None of the land to which the application relates constitutes or forms part of an agricultural holding

* (2) I have/the applicant has given the requisite notice to every person other than myself/himself who at the beginning of the period of 21 days ending with the date of the application was a tenant of any agricultural holding any part of which was comprised in the land to which the application relates.

These persons are:

Name(s)	Address(es)	Date of Service of Notice(s)
.....	.....	.....
.....	.....	.....
.....	.....	.....

CERTIFICATE D

I confirm that I have been unable to notify all parties under Certificates A, B and C

* Delete whichever is inappropriate

Signature of ~~Applicant~~/Agent [redacted]

On behalf of Mr John Dunn

Date 20/12/2013

see note 15

CHECKLIST - The following documentation should be submitted:

please tick all boxes

- [x] **TWO** APPLICATION FORMS
- [ ] **TWO** SETS OF PLANS
- [x] FEE (Where appropriate)
- [ ] DESIGN & ACCESS STATEMENT (National and Major applications only)
- [ ] PRE-APPLICATION CONSULTATION REPORT (National and Major applications only)

WARNING

If any person issues a certificate which purports to comply with the requirements of Section 35 of The Town and Country Planning (Scotland) Acts, and contains a statement which he knows to be false or misleading in a material particular or recklessly issues a certificate which purports to comply with those requirements and which contains a statement which is false or misleading in a material particular he shall be guilty of an offence and liable on summaryconviction to a fine not exceeding level 3 on the standard scale.

Revision 'A' - November 2008
Revision 'B' - December 2008
Revision 'C' - July 2009
Revision 'D' - October 2009
Revision 'E' - October 2011

VG ENERGY
Renewable Technology Specialists

Environmental Report for a Wind Turbine Development at Land Southwest of Auchentiber Bridge

Client:	Mr J. Dunn
Site Location:	Land southwest of Auchentiber Bridge, Auchenfoyle, Inverclyde, PA13 4TL

Environmental Report Prepared by: BL
Landscape Assessment Prepared by: LB
Approved by:

Disclaimer:

CONTENTS

1 INTRODUCTION

1.1 Planning Application

This Environmental Report is being submitted as part of a Planning Application to Inverclyde Council for the installation of a single Gamesa G52 wind turbine, with a height to blade tip of 70metres (m), at Land to the southwest of Auchentiber Bridge, Auchenfoyle. The application for planning consent is made under the Town and Country Planning (Scotland) Act (as amended) 2006.

A Screening Opinion Response (Reference: 12/0006/SCREEN) was received from the Council on the 20th April 2012, stating that an EIA was not required. The proposal has been amended from a 65m turbine to a single 70m turbine, as it is strongly believed that the development would generate less of an impact if the typology of turbine matched that consented at High Mathernock Farm. By matching the typology of turbine, the visual clutter of turbines in the local landscape is reduced, consequently resulting in the reduced impact of the overall development. As per the guidelines issued through the Screening Opinion, this report will thoroughly examine the potential impacts of the proposal on various aspects of the environment, including: landscape, ecology, hydrology, cultural heritage, shadow flicker and noise. VG Energy Ltd has prepared this Environmental Report on behalf of Mr J. Dunn, who owns Burnside Farm and the land at the development site.

VG Energy Ltd is an Ayrshire based organisation involved in the planning, re-sale, installation and maintenance of turbines. The organisation employs over 60 members of staff over four offices across the United Kingdom. This project, if consented, will be maintained internally within VG Energy to ensure that any project is part of the company's portfolio from start to finish of its 25 year operation and ensures the long-term security of the organisation.

1.2 Applicant Information

The applicant owns the land at Auchentiber Bridge, which has been in the family for over 70 years. The faming business was a much larger outfit in previous years; however the site which is currently farmed is approximately 68 acres. Both the applicant and his wife work the land, which is grazed by 150 sheep; no workers are employed at the site.

As outlined in the EC Council Regulation 1782/2003 governing single farm payments, Mr Dunn has participated in agri-environment schemes to ensure natural habitats, native wildlife and woodlands flourish. The scheme encourages the maintenance and deployment of grass margins, species rich grass, whilst managing hedges to provide habitats for wildlife. Mr Dunn wishes to continue to encourage environmentally friendly practices through his participation in the scheme. The applicant has identified wind farming as a diversification opportunity that will provide an income for the farm, independent of the fluctuations in farm prices whilst significantly reducing its carbon footprint. Mr Dunn has expressed a wish to invest the income from this turbine development into the farm, enhancing the land by draining and reseeding the fields. Mr Dunn would also like to lay new hedges and plant a selection of hardwood trees on

the farm. The applicant wishes to improve the land which they own, and ensure that the farm remains within the family for the third generation. The income generated from this turbine development will enable this to happen for the Dunn family.

2 PROJECT DESCRIPTION

2.1 Site Description

The proposed development site is located approximately 296m west southwest of Auchentiber Bridge, and 132m south of Auchentiber Road which stems from Auchenfoil Road to the west. The topography of the site is simple in form, sloping smoothly in a northerly direction, and consists of grass farm land. Within the development field itself, the land is slightly undulating with drystone walls and post and wire fencing defining the field boundaries.

The site selected for the proposed turbine consists of land located at an elevation of approximately 152m above Ordnance Datum (AOD), and is likely to have a good wind resource. The proposed development site is located approximately 132m to the south of Auchentiber Road, which provides access between Auchenfoil Road and Auchenbothie Road. Approximately 3.3km southeast is the town of Kilmacolm, with the outskirts of Port Glasgow located 2.7km north of the development site. To the southwest of the turbine site, a belt of woodland is located with a line of pylons traversing from northwest to southeast. An illustration of the site layout and a set of detailed site drawings have been attached to the Appendix, Figures 2.1 to 2.3.

2.2 Site Selection

The location of the turbine was chosen mainly due to:

- Topography – whilst the turbine is not situated at the highest point on the farm, (which is to the north, at approximately 160m AOD), it is well placed to receive a good wind resource because the site selected is open to the south (prevailing wind direction);
- Ecology – the turbine base is an appropriate distance (at least 50m plus the blade length) from any potential wildlife habitats, such as trees and hedgerows. In addition, the proposed development site is located 228m north of the watercourse at the southern edge of the field and will not impact negatively on the water environment;
- Nearby structures – the turbine is a safe distance from the nearest buildings which are located approximately 729m west southwest (Gryfe Lea) and 754m northwest (Auchentiber Farm). Electrical pylons running to the west of the turbine site are located a safe distance from the development (306m);
- Landscape and visual impacts – the pylons referenced above represent an industrial presence already in the landscape, thereby reducing the visual impact created by the turbine development;
- Hydrology - the turbines have been sited a minimum of 50m from the nearest issue which runs to the south of the development site;

- Noise – the turbine is located a sufficient distance from nearby noise sensitive receptors, as the closest residential dwelling is approximately 729m west southwest of the development.

2.3 Alternative Locations

As can be seen from the Constraints Map generated (Appendix, Figure 2.4), a number of features within the area surrounding the development site require adequate separation distances from the turbine. When taking into account the separation distances required for each feature, the available land for development is reduced significantly.

To ensure the safety of road users, adequate separation distance has been afforded to the minor road which runs approximately 132m north of the development site. Safety measures have also been taken to ensure that sufficient distance is provided for the electricity pylons which run northwest to southeast 306m west of the turbine.

To comply with guidance set out for the safeguarding of ecological features, including the protection of bats, the turbine has been sited a minimum of 50m plus blade length from the established trees located to the southwest of the turbine. Other features buffered to minimise impact include the issues and burns on land surrounding the development site, and the small drystone walls outlining the field boundaries.

As such, the location chosen represents the best option available for development at the site: It is a safe distance from the minor road to the north, sited a sufficient distance from the electrical pylons, walls and issues onsite, and adheres to the separation distances set out in guidance for areas of woodland. Any other location within this field would be closer to properties such as Auchentiber Farm, Gryfe Lea or High Mathernock Farm. By moving the turbine further to the west or southwest, the development would also require a longer access track, resulting in a larger uptake of land. By ensuring that the land take required for the access track is minimised as much as feasibly possible, the majority of the field remains available as productive farmland. Due to the undulating nature of the field, the chosen location is also the most suitable for the installation of a turbine, as the structure will be located at one of the highest points, instead of being set down in the valley/dip.

2.4 Development Specifications

The proposed project has been designed with the intention of generating zero-carbon electricity through the utilisation of wind as a renewable energy source. The development will require the infrastructure associated with the wind turbine itself, an on-site control unit system and a meter house. The project will also require a new access track and a crane pad, which will be located at the foundation of the turbine for component lifting. The tip height of the proposed turbine is 70 metres, as detailed in the turbine elevation drawing in the Appendix, Figure 2.5.

The turbine details as proposed for this project are shown below:

IMAGE 2.1: PHOTOGRAPH OF A GAMESA G52 WIND TURBINE

TABLE 2.1: TURBINE SPECIFICATIONS

No. of Turbines	1 X Gamesa G52
Hub Height	44m
Rotor Diameter	52m
Height to blade tip (max.)	70m
Number of Blades	3
Colour	Light grey, matt finish

2.5 Access Track

A new track will be required from Auchentiber Road which runs to the north of the development site. The new access track will run from this road down to the turbine base, where a crane pad will be constructed.

The track will be 4m wide (wider at turns) and will be created using stone aggregate (Type 1). The crane pad will be approximately 20m by 30m and will also be created using stone aggregate (Type 1). A number of local contractors will be considered to carry out the building of the access road. The soil where the track will be located will be tested before the depth of the road is determined; although it is thought that the maximum depth will not exceed 60cm. Since the track and crane pad will be constructed of compacted stone aggregate, surface water run-off will be limited due to the permeable nature of the material. This should negate the need for detailed site drainage designs. When construction is completed the track will be left in place to allow for any maintenance work to be carried out.

A detailed site access plan will be produced prior to the works taking place and submitted to the relevant authority.

2.6 Grid Connection

The turbine will be connected to a single storey meter house via underground cabling. The underground cabling will be laid adjacent to the access track, and the meter house will be situated adjacent to the foundation of the turbine.

Connection to the national grid will not be considered as part of this Environmental Report as consent falls under another process, and the environmental legislation surrounding it is separate from that which is covered in this assessment. The planning application for connection to the national grid will also be carried out independently.

2.7 Decommissioning

The operational period of the turbine will be set at 25 years and provision for it to be decommissioned will take place on the expiration of the planning permission. The site will be restored within 6 months of this time unless planning permission is sought for the extension of the operational period. Any application for extension must be done so in accordance with the legislation and regulations surrounding the development at the time of applying. If an extension for operation is not sought, then it is common practice for all equipment which is above ground to be removed from the site completely after having been dismantled.

The disassembled turbine parts can mostly be recycled and will be taken to a suitable recycling plant. Another option is for the decommissioned turbine to be refurbished and sold on the second hand market. At this time, the turbine foundations will be removed and the area will be reinstated. The cables, which will be laid inside ducting, can be easily removed leaving only the ducting in-situ. Once again, the cabling can be recycled at a suitable recycling plant. Access tracks may be covered by topsoil or left in as they are, if they are beneficial to the landowner.

3 PUBLIC PERCEPTION OF WIND ENERGY DEVELOPMENTS

3.1 Public Perception

In order to gain an indication of public attitudes towards wind power in the UK, Ipsos MORI conducted research for RenewableUK using an online panel in April 2012[1]. This involved 1,009 adults, (aged between 16 and 64), from across the UK. Ipsos Mori's online panels follow ESOMAR's code of conduct and use a pre-recruited group of individuals who are screened to ensure representative samples[2]. The results, summarised below, show that the UK public support wind energy:

- 66% of respondents either strongly favour or tend to favour the use of wind power in the UK: This contrasts to only 8% who strongly or tend to oppose wind energy;
- 43% believe that the average UK household contribution of their energy bill[3] towards wind energy as part of the Renewables Obligation is very or fairly good value and 25% believe it is average value: Only 19% feel it is very or fairly poor value;
- 59% perceive that the benefits of wind energy include helping to reduce carbon emissions and the UK's dependence on fossil fuels: Only 8% fail to see any benefit at all;
- 66% believe that the visual impact of wind farms on the landscape are more acceptable than not.

From another study by YouGov and The Sunday Times[4], it appears that combating climate change and environmental issues are still very much supported by the majority of the public. Of the 1,696 adults from across the UK surveyed in September 2011, 56% wanted to see more wind farms in the UK. Only 19% of survey respondents wanted to see less emphasis on wind power. When asked about other forms of energy, just 35% of survey respondents believed more nuclear was the way forward, while only 16% believed the number of coal power stations should be increased. 60% of respondents thought the government is right to subsidise wind farms to encourage more wind power.

3.2 Common Misconceptions

It is sometimes believed that if a wind turbine is consented within an area it will 'set a precedent' to allow further developments within that region. Each site is considered individually as no two locations are the same. As such, each proposed development should be analysed by

[1] RenewableUK Wind Power Omnibus research: http://www.ipsos-mori.com/researchpublications/researcharchive/2946/RenewableUK-Wind-Power-Omnibus-research.aspx
[2] Ipsos Mori's online panels (see link to i-Omnibus too): http://www.ipsos-mori.com/researchtechniques/datacollection/online/onlinepanels.aspx
[3] Calculated by Ofgem for financial year 2010/2011 as £7.74
[4] YouGov Plc & Sunday Times (2011): http://cdn.yougov.com/cumulus_uploads/document/gm4jg0973n/Sunday%20Times%20Results%20111125%20VI%20and%20Trackers.pdf

the local authority and judged on individual merit. Developers should additionally consider the constraints of each site carefully for their application and propose a development that is suited and sensitive to the landscape. Planning authorities are, in turn, discouraged from second guessing future development within regions. Some landscapes have the capacity for multiple turbine developments without suffering negative effects from a cumulative visual impact. However, some landscapes are only suited to single or few turbines being sited within them, or may not be suited to any. As landscapes evolve the issue of a cumulative impact of turbines and their effect on the natural and anthropogenic environments becomes more prominent. It may be pertinent for some developments to be assessed for their effect in conjunction with other applications within the planning process. However, local authorities should not make assumptions beyond what is tangible within the planning system. As stated, each turbine location is specific and therefore each application is unique. The role of cumulative impact should only be applied where it is pertinent to do so and only as part of a fair analysis of each site.

3.3 Changing Perception of Landscape

The impact of the turbine has to be examined, to the greatest extent possible, using analysis of the effect on contemporary visual receptors. It must, however, be noted that public perception of landscape evolves as the landscape itself changes. Wind turbines are a modern and rapidly expanding part of the renewable energy sector. As such their presence is relatively new which causes them to be perceived as particularly visually prominent. It is anticipated that public perception of this technology, and its apparent impact upon landscape, will change over time. Although turbines should always be sited with the upmost consideration and respect for the landscape, their impact should lessen over time as they become a more common sight.

3.4 Recreation and Tourism

To date, there is no evidence to suggest that wind turbines have an adverse effect on tourism. Wind farms have become increasingly popular, with tourists and locals alike visiting a number of wind farms across the UK. Whitelee wind farm, Ayrshire, and the Ecotech Centre, Norfolk, have proven to be popular attractions; with Whitelee alone attracting over 120,000 visitors in its first year. MORI conducted a study on "Tourist Attitudes towards Wind Farms" which states that "*when [participants of the survey were] asked whether the presence of wind farms had a positive or negative effect, two in five (43%) maintained that it had a positive effect, while a similar proportion felt it was equally positive and negative. Less than one in ten (8%) felt that it had a negative effect*"[5].

In 2011, VisitScotland commissioned research to learn more about consumer attitudes to windfarms and their effect on tourism. The report was released in April 2012 and provides an insight into how visitors to the Scottish countryside feel towards windfarm developments. The report found that 27.5% of respondents strongly disagreed with the notion that windfarms spoilt the Scottish countryside, with only 9% strongly agreeing that wind developments ruined

[5] BWEA, Tourist Attitudes towards Wind Farms, http://www.bwea.com/pdf/MORI.pdf

the Scottish countryside. 83% of respondents said their decision to visit an area would not be affected by the presence of windfarms, compared with only 17% who stated a windfarm would influence their choice. The statement 'I would tend to avoid an area of the countryside if I knew there was a wind farm there' showed interesting results. The highest percentages of results were accounted to 29.4% of respondents who strongly disagreed with the statement; compared with only 7.1% of respondents who strongly agreed. Of the people surveyed, 27.4% neither agreed nor disagreed to the statement. Further statements put to the participants for response included 'Using wind farms in the promotion to tourists would provide an added appeal to visitors'. Around a quarter of Scottish respondents agreed with this statement, expressing belief that the developments would be an added attraction for visitors. A large proportion (42.4%) claimed to have no strong feelings of agreement or disagreement with the statement. It is also worth noting that respondents expressed strong belief that wind farms are necessary for the future of energy generation. As well as this, Scottish respondents disagreed (mean of 4.32) with the statement 'Wind farms are an eye sore on the landscape and ruin the tourism experience', highlighting a degree of visual acceptance of turbine developments in the landscape[6].

As a conclusion to this research, taking into account the statistics gathered, it is stated that windfarms and wind energy developments do not 'ruin the tourism experience' in Scotland or the wider countryside.

[6] VisitScotland Windfarm Consumer Research: http://www.visitscotland.org/pdf/Revised%20Oct%2012%20%20Insights%20Wind%20Farm%20Topic%20Paper.pdf

4 SOCIO-ECONOMIC ASSESSMENT

The following section provides a brief overview of the area surrounding the proposed development.

4.1 Location

The site is located within the local authority of Inverclyde which has a population of 81,000[7]. Inverclyde is on the west coast of Scotland, with the Firth of Clyde hugging the northern shore. The Council borders with two local authorities; North Ayrshire to the south, and Renfrewshire to the east and southeast[8].

Within Inverclyde, the proposed turbine development is located 3.3km northwest of the nearest town of Kilmacolm, with the larger towns of Port Glasgow and Greenock to the north approximately 2.7km and 5.8km retrospectively.

The development site itself is located 1.5km east of Clyde Muirshiel Park and 950m south of the 18-hole moorland course at Devol Road Golf Course. The road networks surrounding the site consist mainly of B-class and minor roads. Auchentiber Road which runs from west-east to the north of the development site provides access from Auchenfoil Road (B788) to the west and Auchenbothie Road to the east.

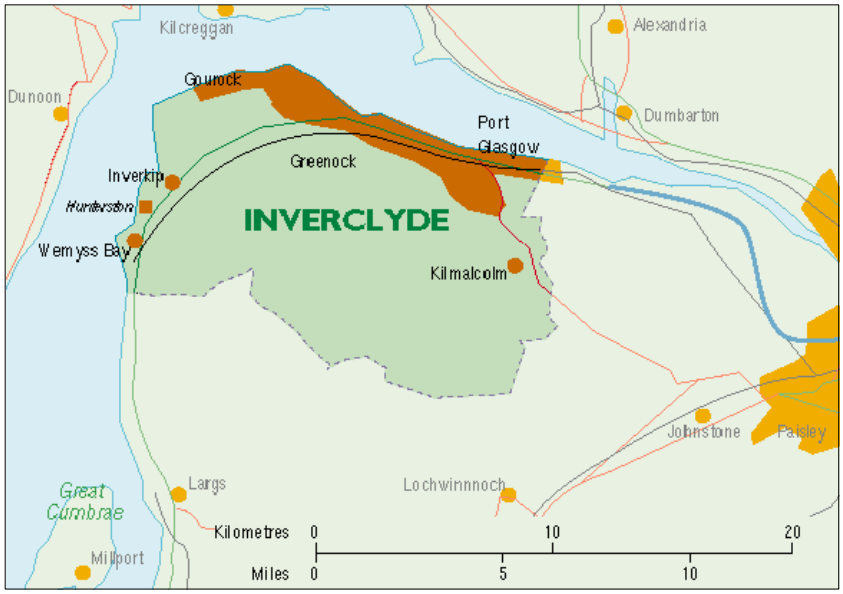


IMAGE 4.1: MAP OF INVERCLYDE LOCAL AUTHORITY AREA[9]

[7] National Records of Scotland; http://www.scotlandscensus.gov.uk/documents/censusresults/release1a/rel1asb.pdf
[8] Local Authority Areas, Scottish Government, http://www.scotland.gov.uk/Resource/Doc/933/0009386.pdf
[9] Dundee University, Unitary Authorities, Inverclyde, http://www.trp.dundee.ac.uk/data/councils/nc19.html

4.2 Local Businesses

Information on the local businesses near the proposed turbine site has been gathered using data published online from the Scottish Assessors Association. This online portal provides details of the Rateable Values for all non-domestic properties in Scotland and therefore provides an extensive coverage of businesses across the country. However, as only a limited number of Assessors work to develop, deliver and maintain the portal, some information can be slightly outdated[10]. The main businesses near the development site are as follows:

TABLE 4.1: BUSINESSES IN VICINITY OF PROPOSED TURBINE

Business Name	Address	Business Type
Churches of God in Scotland	Auchenfoyle, Auchenfoil Road, Kilmacolm, PA13 4TH	Halls
E & S Black	Faulds Farm, Auchenfoil Road, Kilmacolm, PA13 4TH	Stables
The Haven	Horsecraig, Auchenfoil Road, Kilmacolm, PA13 4TH	Hostel

Of the three businesses listed in Table 4.1, it is deemed that none will be adversely impacted by the development at Auchentiber Bridge. The businesses do not rely on tourism or the visual amenity of the surrounding landscape to a degree which would be affected by a single turbine installation. Discussions have been held with The Haven to discuss any concerns that they have regarding the development, being one of the closest businesses to the turbine. The Haven has not expressed concern with the siting of the development and have conveyed overall support for the proposal.

Although the turbine will introduce a modern man-made element into the area, in relatively close proximity to the businesses, assessment has proven that the properties will not experience unacceptable levels of noise or shadow flicker from the structure. The visual implications of the turbine are also not considered to be negative to those individuals utilising the services provided by the businesses. As such, on the whole, it is not perceived that there will be an adverse impact to the local business community as a result of the proposed development at land southwest of Auchentiber Bridge.

[10] Scottish Assessors Association: http://www.saa.gov.uk/

Tourism in Inverclyde

Tourism in Inverclyde is underpinned by the *Tourism Strategy and Action Plan 2009-2016,* which sets out a framework to provide focus for all Tourism Activity in Inverclyde over a seven year period[11]. Emphasis is placed on the importance of the River Clyde, which as stated in the plan, "*has always been the main economic asset and life blood of the Inverclyde area"*. Boat trips and cruises are a common sight along the Clyde and draw a number of tourists to the area year on year.

On the coastline, tourist attractions include water-based activities, with various cultural and heritage experiences within the boundaries of Inverclyde. The Clyde Muirshiel Regional Park which is located approximately 1.5km from the development site attracts a number of visitors throughout the year to see some of the rarest species of Scottish wildlife, or taking part in a variety of outdoor sports and activities[12].

Tourist opportunities within the local landscape surrounding the development site include walking and cycling, fishing and golfing. Knapps Loch, an artificial loch built in the early 20th Century by the local fishing club, is located approximately 5.6km southeast of the development site. The loch is a popular walking location, with dog walkers and fishermen being a common site around the loch. However due to the distance between the development site and Knapps Loch, the impact posed will be minimal, as demonstrated by the photomontage and wireframe generated from the entry gate to the Loch (Appendix B, Figure 6.9).

The nearest attraction to the development site is Devol Road golf course which is located approximately 950m north. The 18-hole moorland course is considered a challenging, yet enjoyable course, and attracts players of all abilities. Although the sections of the course will have views out over the turbine development at Auchentiber Bridge, it is not considered that the resultant impact will be adverse or detract from the quality of the course. This is discussed further in Chapter 6: Landscape and Visual Impact Assessment.

4.3 Socio-Economic Effects

As the scale of the development is relatively small, the turbine has the potential to generate a limited range of social and economic effects. The opportunities are listed as follows:

- Pre-construction – contract opportunities for various specialists;
- Construction – opportunities for haulage, access track and turbine base construction, supply of building materials, electrical services and fencing contractors;
- Operation – the owner of the turbine, who may be able to use the profits created from the turbine to support his farming business;
- Decommissioning – similar benefits as that of the construction stage.

[11] Inverclyde's Tourism Strategy and Action Plan 2009-2016

[12] Inverclyde's Tourism Strategy and Action Plan 2009-2016

To summarise, there will be a short to medium term improvement in employment created by the additional spend of income and wages in to the local economy and purchase of materials. Employment opportunities may arise down the supply chain by the companies providing services to this development. The turbine will require regular maintenance over its lifespan which will be provided by VG Energy's own installation and maintenance team. It is perceived that as the turbine will be owned by a local resident, the income generated will be reinvested into both his business and the local economy, therefore creating more opportunities for workers in the area.

4.4 Community Fund

As part of this development, the applicant has expressed a desire to set up a Community Benefit Scheme. Through the establishment of such a scheme, the applicant wishes to spread the benefit of the project to the wider community. The Scheme will not only benefit local groups in the area, but it will also allow those who are not directly related to the project to share in its benefits. By including the community in the project, it allows the engagement of others in a renewable energy project which will increase awareness and support for such developments.

The development site at Land southwest of Auchentiber Bridge is located approximately 921m north northwest of Horsecraigs. In 2003 the building was reopened, providing a home for the charity 'The Haven'. The Haven is a Christian organisation which provides accommodation and support for young men involved in alcohol and drug misuse, providing them with a safe place and the help needed to become addiction free[13]. The applicant and his family identified The Haven as an organisation which they would like to support, as the charity provides an important worthwhile service within the local community.

VG Energy has held discussions with The Haven regarding their participation in a Community Benefit Scheme set up as part of the proposed development. The Haven has expressed support for the development and would be grateful for the support offered by the Scheme. The Haven has expressed great appreciation, and has advised that the funds made available to them through the development at Auchentiber Bridge, would ensure their operation for the future. The financial support provided by the Scheme would allow them to accept and offer counselling to increased numbers of young men with addictions, providing them with the opportunity to reintegrate back into community post-treatment.

The proposed turbine development at Auchentiber Bridge will allow a Community Benefit Scheme to be established, which in turn will provide support for The Haven for each year of its operation. As such, the development will support both employment and charity within the local area, along with a number of vulnerable individuals utilising The Haven.

[13] The Haven Kilmacolm: http://www.thehavenkilmacolm.com/about-us/

5 RELEVANT PLANNING POLICY

5.1 Environmental Impact Assessment

There is a statutory obligation for an EIA to be undertaken if deemed necessary by the Local Planning Authority. The level of assessment required should correspond to the scale of the development, as defined by the EIA Directive. As this turbine is of a type listed under Schedule 2 (*i.e. hub height exceeds 15m*) within the terms of the Town and Country Planning (Environmental Impact Assessment) (Scotland) 2011, a screening opinion was submitted to Inverclyde Council.

In response the Council confirmed that an EIA would not be required. Within the Screening Response, the Council did state the following –

- *The site is on what appears to be cultivated farmland. It is close to Auchentiber Road, which is a quiet road subject to very low traffic levels.*
- *The nearest settlements are parts of upper Port Glasgow and Greenock, and Kilmacolm with main groupings of residences starting about 2kms distant.*
- *Among the main visual receptors will be users of the B788, the A761 and local roads, occupiers of nearby farm steadings and potentially, more distant residents of upper Port Glasgow and Greenock, and some residents along the western fringes of Kilmacolm.*
- ***The implications of this are that the extent and significance of impact will probably be limited.***

This report will give a comprehensive account of a number of important issues for the proposed development, considering other environmental, social and economic aspects within the study area.

The projects development has been refined in order to avoid or reduce any foreseeable potential environmental conflicts. Potential impacts associated with all stages of the development, from construction through to decommissioning, have been thoroughly analysed. Where necessary, mitigation measures have been designed to alleviate any impacts as much as is feasibly possible and will be discussed below.

5.2 National Planning Policy and Legislation

a. Legislation

The Scottish Government is committed to increasing the amount of electricity generated from renewable energy sources as a vital part of the response to climate change and in line with the European Commission's Renewable Energy Directive (RED) 2009.

The Climate Change Delivery Plan (Scottish Government, 2009) committed Scotland to generating 20% of all energy and 50% of all electricity from renewable sources by 2020. This target has since been increased through the Routemap for Renewable Energy in Scotland

2011[14], which sets out the goal of renewables providing the equivalent of 100% of the Country's gross annual electricity consumption by 2020. In addition, 500 MW of renewable energy should be community and locally-owned by 2020, which includes rural businesses. Onshore wind has been recognised as having the ability to make a very large contribution towards these goals. It should also be noted that the above targets are not considered to be a cap and that regional targets have not been set by the Scottish Government.

Electricity suppliers are also responsible under the Renewable Obligation (Scotland) Order 2002 to ensure that a certain proportion of the electricity they supply to consumers in Scotland comes from an eligible renewable resource.

b. Planning Policy

In regards to planning, Scottish Planning Policy (SSP, published in February 2010) supports the installation of a wide range of renewable energy technologies to help achieve the above targets, including energy storage. Paragraphs 182-195 of the SPP relate to renewable energy technologies[15]. The purpose is to mainly provide guidance for local development plans set out by each local authority and is therefore taken into account in the chapter below. It is specified that planning authorities should support small businesses in developing renewable energy initiatives in an environmentally acceptable way: It is not perceived that the proposed turbine development at Auchentiber Bridge will cause an unacceptable environmental impact.

The following policies have been considered from the initial stages of this development:

- Renewables Advice – onshore wind turbine (2011) [16]
- Pan 58 Environmental Impact Assessment[17]
- PAN 73 Rural Diversification[18]
- National Planning Framework for Scotland 2 (NPF2) [19]

Small-scale onshore wind energy production, such as the development proposed here, is to be encouraged in order to help both Scottish and National renewable energy targets. This type of development improves business efficiency, helps to reduce carbon emissions and improves the sustainability of the local energy supply.

[14] 2020 Routemap for Renewable Energy in Scotland: http://www.scotland.gov.uk/Publications/2011/08/04110353/0
[15] Scottish Planning Policy: http://www.scotland.gov.uk/Publications/2010/02/03132605/0
[16] http://www.scotland.gov.uk/Topics/Built-Environment/planning/National-Planning-Policy/themes/renewables
[17] http://www.scotland.gov.uk/Publications/1999/10/pan58-root/pan58
[18] http://www.scotland.gov.uk/Publications/2005/02/20638/51727
[19] http://www.scotland.gov.uk/Topics/Built-Environment/planning/National-Planning-Policy/npf/

5.3 Local Council

The development site at Auchentiber Bridge is within the boundary of Inverclyde Council, and as such can help the Council contribute to the Scottish Government's climate change targets through reducing the local economy's reliance on fossil fuels and lowering carbon emissions.

Inverclyde Council have produced policy documents for renewable energy developments within their boundary; these documents will be utilised throughout the planning stages of the proposal for a wind turbine at land southwest of Auchentiber Bridge.

a. Implemented Policy

The proposed development is located within the Inverclyde Local Plan area within Inverclyde Council. The following policies and guidance documents set by the Council relate to wind farm and renewable energy development and are taken into account within this planning application:

- Inverclyde Local Plan (2005);
- Glasgow and the Clyde Valley Joint Structure Plan (2006);
- Glasgow and the Clyde Valley Strategic Development Plan (May, 2012);
- Interim Supplementary Planning Guidance for Wind Farms (2010); and
- Inverclyde Local Development Plan, Proposed Plan May 2013 – Supplementary Guidance on Renewable Energy.

INVERCLYDE LOCAL PLAN (2005)

POLICY DS8 – GREEN BELT

There is a presumption against development in the designated Green Belt, as identified on the Proposals Map. Proposals will only be considered favourably in exceptional or mitigating circumstances and where the criteria for development in Policy DS10 for the 'Countryside' can be satisfied.

POLICY DS10 – COUNTRYSIDE

Development within the countryside (including the Green Belt) will be permitted only where it can be supported with reference to the following criteria:

(a) It is required for the purposes of agriculture and forestry;
(b) It is a recreation, leisure or tourism proposal which is appropriate for the countryside and contributes to the social and economic development of the area;
(c) There is a specific locational requirement for the use and it cannot be accommodated on an alternative site;

(d) It entails appropriate re-use of vacant buildings which it would be desirable to retain for their historic or architectural character; or
(e) It forms part of an establishment or institution standing in extensive grounds; and
(f) It does not adversely impact on the landscape character;
(g) It does not adversely impact on the natural heritage resource;
(h) It does not adversely affect the visual amenity of the area and is capable of satisfactory mitigation;
(i) There is a need for additional land for development purposes, provided it takes account of the requirements of the Structure Plan; and
(j) It complies with other relevant Local Plan Policies.

As discussed throughout this Environmental Report, the proposed development at Land southwest of Auchentiber Bridge is a means of diversification for the applicant, who currently works the land for grazing purposes. The development will provide an opportunity for the applicant and his family to diversify the business and reduce the farms carbon footprint, through the adoption of a renewable energy installation. Sited in the most appropriate location within the land boundary, down from the highest elevation, the turbine will not adversely impact on the visual amenity of the local area. As discussed in detail in Chapter 6: Landscape and Visual Impact Assessment, and through the ZTV and maps generated, it is demonstrated that the proposed turbine is of an appropriate scale, and does not adversely impact on the landscape character or the natural heritage; therefore complying with Policy DS8 and DS10.

POLICY TA4 – MANAGING THE STRATEGIC ROAD NETWORK

Inverclyde Council, as Planning Authority, will seek to manage development that would affect traffic flow on the strategic road network within Inverclyde, so as to allow essential road traffic to undertake journeys as efficiently as possible.

The proposed development at land southwest of Auchentiber Bridge will not increase the traffic flow on roads within Inverclyde to an unacceptable level. Inevitably, the delivery of components will result in a slight increase in traffic, though this will only occur for a few weeks during construction. This is discussed within Chapter 13: Traffic and Transport.

POLICY TA6 – SAFEGUARDING THE PUBLIC TRANSPORT NETWORK

In order to safeguard and develop the area's public transport network, Inverclyde Council, as Planning Authority, will:

(a) Consider the impact of development that could adversely affect the efficiency and effectiveness of the existing network;
(b) Support proposals that will result in an improved or extended public transport service; and

(c) Safeguard land and infrastructure required for:

i. The re-opening of the Glasgow Central-Bridge of Weir-Kilmacolm railway line; and

ii. A public transport interchange in Gourock town centre.

The installation of a single wind turbine at Land southwest of Auchentiber Bridge will not impact on the public transport network of Inverclyde.

POLICY H1 – SAFEGUARDING THE CHARACTER AND AMENITY OF RESIDIENTIAL AREAS

The character and amenity of existing residential areas, identified on the Proposals Map, will be safeguarded, and where practicable, enhanced. New residential development will be acceptable, in principle, subject to other relevant Local Plan policies.

As demonstrated throughout this Environmental Report, and discussed in detail in Chapter 6: Landscape and Visual Impact Assessment, the character and amenity of local residential areas surrounding the development site will be maintained. The development will not impact negatively on properties within the local landscape, including those sporadically located throughout the area.

POLICY HR1 – DESIGNATED ENVIRONMENTAL RESOURCES AND BUILT HERITAGE

Development that would adversely affect, directly or indirectly, the natural or built heritage resources listed in Schedule 9.1 and where indicated, on the Proposals Map, will not normally be permitted. Having regard to the designation of the environmental resource and built heritage, exceptions will only be made where:

(a) Sites of Special Scientific Interest (SSSI) will not be compromised;
(b) Visual amenity and townscape will not be compromised;
(c) No other site, identified in the Local Plan as suitable, is available;
(d) The social and economic benefits of the scheme outweigh the total or partial loss of the environmental resource;
(e) The developer has demonstrated that the impact of the development on the environment will be minimised; and
(f) The loss can be compensated by habitat creation/site enhancement elsewhere, and where there are satisfactory arrangements to achieve this.

In response to the above points:

(a) The proposed development will not compromise the features associated with any SSSIs within the local area.
(b) As discussed throughout this Environmental Report, the visual amenity and townscape of the surrounding area will not be compromised or impacted negatively as a result of the proposed development at Land southwest of Auchentiber Bridge.

(c) The turbine has been positioned at the most suitable location within the applicants land boundary, with onsite constraints reducing the amount of land available for development. The position chosen represents the most viable option at the site.

(d) As part of the project, a community benefit fund will be set up with the money being distributed to local organisations and groups. The Haven has been approached, and members have agreed to partake in such a scheme, which would ensure the future operation of the clinic and support of its clients. The turbine will also generate an income for the applicant and his family which will allow them to continue operating the farm. As a result, the economic benefit of the development will be spread throughout the local area surrounding the development site.

(e) As demonstrated throughout this report, the development will not impact negatively on the landscape or the surrounding environment. Through sensitive siting and design, the proposal has been developed to minimise effects to the greatest extent possible, ensuring that it does not generate unacceptable levels of impact.

(f) Only a small section of the arable field will be removed to install the turbine, with the remainder of the site available for farming/grazing. The turbine will not compromise the overall integrity and the development footprint should not require mitigation.

POLICY HR2 – SAFEGUARDING BIODIVERSITY

Inverclyde Council, in conjunction with its partners, and Renfrewshire and East Renfrewshire Councils, will contribute to the preparation of a Local Biodiversity Action Plan, to facilitate the management of species and habitats and enhance the biodiversity of the Inverclyde area.

As discussed within the Ecology Report compiled by Machars Ecology, the proposed development at Land southwest of Auchentiber Bridge will not compromise the biodiversity of the local area.

POLICY HR4 – WATER QUALITY AND ENVIRONMENT

Proposals for development that could affect the water environment will be assessed with regard to their potential impact on:

(a) Water quality and quantity;
(b) Riparian habitats and wildlife.

As addressed in Chapter 9: Soil and Hydrology, the proposed development at Land southwest of Auchentiber Bridge will not impact on the water environment. Mitigation measures will be implemented where necessary to avoid any detriment to the hydrology of the area. As such, this proposal complies with Policy HR4.

POLICY HR8 – AGRICULTRUAL DIVERSIFICATION

Agricultural diversification will be supported where it can be demonstrated that it will comply with Policy DS8, where appropriate, DS10, relating to development in the Green Belt and Countryside respectively, and where it complies with other relevant Local Plan policies.

As noted previously, this proposal complies with both Policy DS8 and Policy DS10. A wind energy development at Land southwest of Auchentiber Bridge will allow the applicant to diversify his farming business to ensure the continued operation of the farm. It will also provide a stable financial future for the family and business, independent of the fluctuating prices associated with the industry.

POLICY HR11 – DEVELOPMENT WITHIN AND ADJACENT TO CONSERVATION AREAS

Development proposals both within and adjacent to Conservation Areas will be acceptable where they are sympathetic to the existing character, pattern of development and appearance of the area and the following matters are satisfactorily addressed, as appropriate:

(a) Siting and orientation of new buildings;
(b) Overall design and style;
(c) Scale of building, extension or alteration;
(d) Design details;
(e) Finishing materials; and
(f) Landscaping and boundary materials.

Located approximately 4.6km southeast of the development site, Kilmacolm Conservation Area falls largely outwith the ZTV generated for the turbine at Land southwest of Auchentiber Bridge. As discussed within Chapter 6: Landscape and Visual Impact Assessment, and Chapter 7: Historic Environment, the Conservation Area will benefit from high degrees of visual screening from the turbine development as a result of the buildings within the village itself, along with the vegetation within the intervening landscape. As such, it is highly unlikely that views of the development will be experienced from within the Conservation Area of Kilmacolm, leading to a negligible impact on the designation. It is therefore possible to conclude that the development complies with Policy HR11.

POLICY HR15 – THE SETTING OF LISTED BUILDINGS

Development will be required to have due regard to the effects on the setting of, and principal views from, Listed Buildings and shall be without detriment to their principal elevations and the main approaches to them.

As discussed in detail in Chapter 7: Historic Environment, the proposed development will not impact negatively on the setting of any Listed Buildings within a 5km radius of the site.

Careful siting of the turbine, down from the highest point at the site ensures that the visual envelope in which the development is visible is reduced to the greatest extent possible. One Grade A Listed Building within 5km falls within the ZTV generated, suggesting that views of the turbine development may be possible. However, on closer inspection it is possible to conclude that due to the location of the building (i.e. St. Columba's Church of Scotland Duchal Road), high levels of visual screening will be provided by the buildings within the village of Kilmacolm itself. As a result, the setting of the Grade A Listed Building will be unaffected by the turbine at Land southwest of Auchentiber Bridge. In addition to this, it is concluded that there will be a negligible impact to the setting of listed buildings within the area surrounding the development site, therefore complying with Policy HR15.

POLICY HR18 – DEVELOPMENT AFFECTING ARCHAEOLOGICAL SITES

Development on or adjacent to Scheduled Ancient Monuments, other archaeological sites and industrial archaeological resources, will normally only be permitted where there is no adverse impact on the resource. Where development is permitted affecting sites of archaeological importance, conditions will be attached to planning consents to allow for excavation and recording before or during development. The Council will require developers to fund such works.

The proposed development is not located on or adjacent to any SAMs or other archaeological sites and as a result, will not impact on such sites. However, as discussed in Chapter 7: Historic Environment, the proposed turbine is located approximately 0.73km from High Mathernock AA battery and camp, a Scheduled Ancient Monument which may experience views of the turbine proposed. Although views from the monument may include portions of the turbine, the structure will not detract from the historic importance or setting of the SAM. The impacts to archaeological sites are discussed in detail within Chapter 7, concluding that through sensitive siting and design, the proposal complies with Policy HR18. Should the Council or its consultees feel the need for a watching brief be carried out during excavation works to monitor and record any findings, VG Energy are willing to source such work.

POLICY HR19 – HISTORIC GARDENS AND DESIGNED LANDSCAPES

Development on sites in Inverclyde included in the Inventory of Historic Gardens and Designed Landscapes in Scotland (refer to Supplementary Document SD no 8) will normally be permitted only where there is no adverse impact on the resource.

Located on arable land at Auchentiber Bridge, the proposed development does not fall within or adjacent to any Historic Gardens and Designed Landscapes. The potential impacts to such designations are discussed in Chapter 6: Landscape and Visual Impact Assessment, and Chapter 7: Historic Environment.

POLICY UT2 – NEW INFRASTRUCTURE

Proposals for the development of new, or extensions to existing, utilities and service infrastructure, will be considered favourably subject to assessment against:

(a) Impact on residential amenity;
(b) Impact on Inverclyde's built heritage and natural environmental resources;
(c) Impact on the landscape;
(d) Impact of any associated noise, smell or hazard; and
(e) Other relevant Local Plan policies.

Taking each of the above points in turn:

(a) The proposed turbine at Land southwest of Auchentiber Bridge will not impact on the residential amenity of those living in the area surrounding the development site. The impact of the proposal is discussed in detail in Chapter 6: Landscape and Visual Impact Assessment, concluding that properties local to the site will not experience adverse effects from the turbine.
(b) The potential impact to the built heritage of the area is discussed within Chapter 7: Historic Environment, with the environmental impacts discussed in the ecology report compiled by Machars Ecology.
(c) Impacts to landscape are discussed in detail in Chapter 6: Landscape and Visual Impact Assessment, concluding that although views of the turbine may be possible from certain points within the area, the impact is not adverse or unacceptable.
(d) The development will not present any smell or hazard. Noise implications are discussed in Chapter 10: Noise Assessment, concluding that the proposed turbine will not exceed limits set in ETSU-R-97 guidance.
(e) Compliance with other policies are discussed within this Chapter.

POLICY UT6 – RENEWABLE ENERGY INFRASTRUCTURE

In assessing proposals for renewable energy infrastructure, Inverclyde Council, as Planning Authority, will have regard to the impact on:

(a) The natural environment and built heritage of the locality;
(b) The landscape, particularly when viewed from major transport corridors;
(c) Residential amenity;
(d) Tourism and leisure resources, particularly if within the Clyde Muirshiel Regional Park; and
(e) The operation of aircraft and telecommunications equipment.

In response to the above points:

(a) As noted, the development will not impact negatively on the natural environment and built heritage of the locality. Sensitive siting of the development minimises the overall impact of the turbine. This is discussed further in Chapter 7: Historic Environment, and within the Ecology Report compiled by Machars Ecology.
(b) Visualisations and analysis have been conducted to ascertain the potential impact to transport routes within the local area. The details of this assessment are discussed in Chapter 6: Landscape and Visual Impact Assessment.
(c) The development will not impact negatively on the residential amenity of those living within the local landscape surrounding the development site at Land southwest of Auchentiber Bridge.
(d) The proposed development will not adversely affect any tourism or leisure resources within the area. Although the turbine will be visible from the golf course (Devol Road), approximately 950m north of the development site, the impact is not unacceptable.
(e) Assessment concludes that the turbine development at Land southwest of Auchentiber Bridge will not impact on the operation of aircraft or telecommunications links.

POLICY UT10 – PROPOSALS FOR DEVELOPMENT INVOLVING NOISE

Proposals for development which involve noisy processes and/or extended hours or operation, will only be acceptable where they do not affect the amenity of noise sensitive uses.

Although the construction of the proposed development will involve some activities which emit noise, the works will be scheduled to fall within working hours, and agreed with the relevant authorities prior to work commencing. The noise generated from the development will not be unacceptable and will not affect the amenity of those noise sensitive receptors within the area.

GLASGOW AND THE CLYDE VALLEY JOINT STRUCTURE PLAN (2006)

RENEWABLE ENERGY

Proposals for all windfarms should be assessed in relation to criteria including, as appropriate grid capacity, impacts on the landscape and historic environment, ecology (including birds), biodiversity, and nature conservation, the water environment, communities, aviation, telecommunications, noise and shadow flicker and in accord with Strategic Policies 9 and 10, and the scale of significance set in Schedule 9.

In response to the above, this Environmental Report addressed the criteria listed. The potential impacts to landscape and the historic environment are discussed in detail in Chapters 6 and 7 respectively, with the potential effects to the natural environment being addressed within the Ecology Report compiled by Machars Ecology. Noise and shadow flicker

are discussed in detail in Chapters 10 and 11 respectively, with the impacts to the water environment addressed in Chapter 9: Soil and Hydrology.

STRATEGIC POLICY 9: ASSESSMENT OF DEVELOPMENT PROPOSALS

In order to accord with the Structure Plan, development proposals will require to satisfy the following criteria:

B. That the location of the development is appropriate in terms of the need to:
(i) Safeguard the environmental resources listed in Schedule 7 or identified in local plans (including regard to landscape character and quality);
(ii) Avoid isolated and sporadic development in the Green Belt and the wider countryside
C. That appropriate provision has been made by the developer for:
(i) The infrastructure or facilities required to make the development acceptable;
(ii) The implementation of appropriate transport measures for the minimisation and management of the future levels of traffic generated, including Green Transport Plans;
(iii) Remedial environmental action and maintenance of related greenspaces;
(iv) The provision of sustainable urban drainage systems in accord with the relevant drainage strategy of assessment;
(v) The provision of ICT network connections;
(vi) The excavation and recording of archaeological sites where preservation cannot be achieved.

In response to the above points in Strategic Policy 9:
B (i) The development does not impact negatively on the environmental resources listed in Schedule 7 or those within the local plans. The quality and character of the landscape will not be detrimentally affected by the proposed turbine at Land southwest of Auchentiber Bridge, as discussed in Chapter 6: Landscape and Visual Impact Assessment.
B (ii) Although sited within the Green Belt, it is demonstrated throughout this Environmental Report that the turbine is located at the most appropriate location at the site, and not sited 'sporadically' within the area.
C (i) The infrastructure and facilities required for the construction of the development will be provided by VG Energy, and removed at the end of the turbines life.
C (ii) The vehicles utilised for the delivery of turbine components to the site will not increase the level of traffic on the local road networks to unacceptable or unsafe levels. The proposed delivery route is discussed further Chapter 13: Traffic and Transport.
C (iii) N/A
C (iv) N/A
C (v) N/A
C (vi) The completion of a watching brief can be arranged during the excavation stages of construction if deemed necessary by the relevant authorities.

INVERCLYDE LOCAL PLAN 2005: INTERIM SUPPLEMENTARY PLANNING GUIDANCE (SPG) FOR WIND FARMS (2010)

POLICY UT6A: WIND FARMS OF 20MW AND ABOVE

Wind farms with an output of 20MW and over will be supported where:

a) *The objectives of international natural heritage designation are not compromised or where the proposed development is likely to have an adverse effect:*
   - *There is no alternative solution; and*
   - *There are imperative reasons of over-riding public interest, including those of a social or economic nature;*

b) *The objectives of national natural heritage designation and the overall integrity of the area are not compromised or where any significant adverse effects on the qualities for which the area has been designated are clearly outweighed by social and economic benefits or national importance;*

And where the proposed development:

c) *Is sited within the landform to ensure it does not have a detrimental effect on the landscape and wider environment;*
d) *Does not have an unacceptable adverse impact on the positive strategic assets of Clyde Muirshiel Regional Park and the West Renfrew Hills Scenic Area, such as:*
   i. *Landscape and visual amenity;*
   ii. *Tourism;*
   iii. *Recreation; and*
   iv. *Conservation;*
e) *Does not have an unacceptable adverse impact directly on the built heritage of the area or its setting;*
f) *Does not have an unacceptably adverse impact on biodiversity;*
g) *Does not have an unacceptable impact on the water environment, including its quality, quantity and ecological status;*
h) *Does not lead to unacceptable cumulative impacts on the landscape;*
i) *Does not have an unacceptable adverse effect on aviation interests;*

And where:

j) *In consultation with the relevant bodies, the presence of notifiable installations and exclusion zones are taken into account when designing sites; and*
k) *In consultation with the relevant bodies, the presence of broadcasting and telecommunications infrastructure are taken into account when designing sites.*

Note (1) The criteria would also apply to smaller scale wind farms (<20MW) which can often be more easily accommodated in the landscape, therefore, some of the areas that are not suitable for strategic wind farms could be acceptable. It would still be necessary to protect the environmental and built heritage resources and the local community by ensuring they were

designed and sited to incur minimum impact. Given the variety of combinations and sizes of turbines that could be used to produce an output up to 20MW, it is likely that it will only be possible to determine what is acceptable when specific applications are assessed.

During the design development stage of the proposed development at Land southwest of Auchentiber Bridge, the criteria of Policy UT6A was followed to ensure compliance with Inverclyde Policy. Taking each of the points into consideration:

a) As discussed in the Ecology Report compiled by Machars Ecology, the development will not compromise any sites of international natural heritage designation.
b) As above, the development will not impact negatively on, or compromise the objectives of any sites of national natural heritage.
c) By siting the turbine down from the highest point at the site, the visual envelope in which development will be visible over the surrounding geography is reduced significantly. Assessment also demonstrates that the turbine has been carefully sited to minimise the impacts of the development to the greatest extent possible.
d) As discussed throughout this Environmental Report, the development will not generate unacceptable impacts to the Clyde Muirshiel Regional Park or the West Renfrew Hills Scenic Area. This is addressed further in Chapter 6: Landscape and Visual Impact Assessment.
e) The development will not have an unacceptable adverse impact on the built heritage or setting of the area, as demonstrated in Chapter 7: Historic Environment.
f) Assessment within the Ecology Report (Machars Ecology) concludes that there will be no adverse impact to the biodiversity of the area.
g) Chapter 9: Soil and Hydrology addresses the potential impacts to the water environment. Assessment concludes that the development will not adversely impact on the hydrology of the area, with the implementation of mitigation measures possible if necessary.
h) As demonstrated within Chapter 6: Landscape and Visual Impact Assessment, the proposed turbine at Land southwest of Auchentiber Bridge will not generate an unacceptable cumulative impact on the landscape.
i) The development will not impact negatively on aviation interests.
j) Installations and exclusion zones have been acknowledged and taken into account during the development stage.
k) Assessments have been carried out during the design development stage to ensure that the turbine at Land southwest of Auchentiber Bridge will not be to the detriment of broadcasting and telecommunication infrastructure.

POLICY UT6B – SMALL SCALE WIND TURBINE DEVELOPMENT

In assessing proposals for small scale wind turbine developments, Inverclyde Council, as Planning Authority, will be supportive where the proposed development satisfies the criteria of Local Plan Policies UT6 and UT6A, where relevant, and will have regard to the impact on:

(a) neighbouring/adjoining properties and residential amenity generally;

(b) road safety;
(c) natural and built heritage resources in proximity to the site;
(e) proximity to pylons and overhead power lines, and other service infrastructure; and
(f) the landscape, especially when viewed from public vantage points, including local roads, neighbouring settlements, and when set against the skyline.

In response to the points noted:

(a) The development will not adversely impact on neighbouring properties or the amenity of those residing in the local area, as demonstrated within Chapter 6: Landscape and Visual Impact Assessment.
(b) Road safety will not be compromised as a result of this development.
(c) Chapter 7: Historic Environment concludes that the development will not impact on sites of historic and archaeological importance to an unacceptable level. Additionally, the Ecology Report compiled by Machars Ecology discusses the potential impacts to the natural environment, concluding that the development will not adversely affect the biodiversity of the area.
(e) Safety has been considered during the design development stage of this proposal, ensuring that sufficient distance is maintained between the turbine and electrical infrastructure nearby, namely pylons and overhead power lines.
(f) Chapter 6: Landscape and Visual Impact Assessment, along with the visualisations generated demonstrate that the development will not generate unacceptable visual impacts to the surrounding landscape, including views from roads and settlements.

INVERCLYDE LOCAL DEVELOPMENT PLAN, PROPOSED PLAN MAY 2013 – SUPPLEMENTARY GUIDANCE ON RENEWABLE ENERGY

POLICY INF1: RENEWABLE ENERGY DEVELOPMENTS

The Council will support development required for the generation of energy from renewable sources, subject to the proposal not having significant adverse effects upon:

(a) Natural heritage designations (international and national designations should not be compromised);
(b) The landscape and wider environment;
(c) Neighbouring settlements;
(d) Tourism, recreation and conservation matters;
(e) The built heritage;
(f) Biodiversity and the water environment;
(g) Air quality;
(h) Road safety and service infrastructure; and
(i) The cumulative effect of such proposals.

a) As demonstrated in the report by Machars Ecology, the development will not have any significant impact on sites of Natural heritage or their associated interests.

b) As discussed in Chapter 6: Landscape and Visual Impact Assessment, there will be no significant impact on the landscape and wider environment.

c) Chapter 6: Landscape and Visual Impact Assessment discusses the impact on neighbouring settlements and deems this to be non-significant.

d) Tourism and recreation is discussed in Chapter 4: Socio-economic Assessment and conservation matters are discussed in Chapter 7: Historic Environment. The development is deemed to have an insignificant impact on each element.

e) The impact upon Built heritage is discussed in Chapter 7: Historic Environment and deemed to have no significant impact.

f) As demonstrated in the report by Machars Ecology and Chapter 9: Soil and Hydrology, the development will not have an unacceptable impact upon biodiversity or the water environment.

g) N/A.

h) As discussed in Chapter 13: Traffic and Transport, there will be no significant impact upon Road safety and service infrastructure.

i) All necessary elements of the development have been assessed cumulatively, where appropriate. There is no unacceptable impact upon any element of the natural or built environment from this development or in combination with like developments.

Additional guidance from the Interim Supplementary Planning Guidance for Wind Farms taken into account during the compilation of this Environmental Report is outlined in the following section.

International and National Natural Heritage Designations

NPPG14 Natural Heritage 1999 Spatial Framework state that any development which would have an adverse effect on a Natural 2000 site would only be permitted where:

- *There is no alternative solution; and*
- *There are imperative reasons of over-riding public interest, including those of a social or economic nature.*

For wind farm proposals which are likely to have a significant effect on a Natura 2000 site, PAN 45 Annex 2 states that an Appropriate Assessment must be undertaken to assess the implications for the conservation interests of the site.

Development that would affect a designated area of national importance should only be permitted where:

- *The objectives of designation and the overall integrity of the area will not be compromised; or*
- *Any significant adverse effects on the qualities for which the area has been designated are clearly outweighed by social or economic benefits of national importance*

Wind farm development should, therefore, be directed away from these designated areas and any adjoining sites which might impact on them.

Green Belt

The Green Belt comprises the area immediately outside the existing urban area where development pressure is at its greatest. The more rural area beyond the outer edge of the Green Belt is designated as 'Countryside'. In the Green Belt the emphasis is on preventing development while in the Countryside it is on controlling development. Wind farm development would, therefore, be more appropriately directed towards the Countryside but would only be acceptable if it could be accommodated within the context of all other designations and criteria.

Cumulative Impact

To date there are no wind farm developments within Inverclyde but the cumulative impact would have to be taken into consideration if development were to go ahead. It is difficult, however, to assess cumulative impact until the specific site locations of proposals are known. Should the need arise, cognisance will be taken of the relevant guidance from SNH and other bodies. At this time, however, cumulative impact is not a consideration in defining broad areas of search within Inverclyde.

Regional and Local Natural Heritage designations

An area of approximately 781 hectares within Inverclyde has been designated as Clyde Muirshiel Regional Park (CMRP) while the regional designations of the West Renfrew Hills Scenic Area covers an area of 77 hectares which is largely contained within the Park. While not afforded the same high protection as international and national designations, these areas are valued for their scenic qualities and their recreational opportunities.

In addition to the regional designations, there are 52 locally designated Sites of Importance for Nature Conservation (SINC) which are locally valued for their flora, fauna or wildlife habitats. While wind farm development could not be ruled out on or adjacent to these locations, strict criteria would have to be laid down to ensure that the impact on the interest for which these areas are designated would be addressed.

Historic Environment and Designed Landscapes

In Inverclyde, there are a number of historic environment resources including Historic Gardens and Designed Landscapes, Listed Buildings, Scheduled Monuments and Archaeological Sites. It is Council policy to prevent unacceptable impact on these sites by development which could compromise or destroy them and their settings. As a result development is normally permitted only where there is no adverse effect on the resource. Pre-application advice on behalf of the Council is also available from the West of Scotland Archaeology Service.

Aviation and Defence Interests

Where there is an airport nearby aviation and defence issues need to be considered. The proximity of Inverclyde to Glasgow Airport raises the issue of safety where part of the airport safeguarding zone is identifies on the eastern edge of the authority. Without specific details of

proposals, however, it is difficult to determine the exact effect a wind farm development would have. It is therefore necessary to consult with the relevant bodies when dealing with developments on a case by case basis.

Water Environment

Watercourses, lochs, wetlands and riparian areas are potential constraints for wind farm developments as well as sensitive ecosystems. Adequate measures to protect the water environment and prevent or mitigate potential impacts on water resources would be imperative at this stage (construction of turbine and associated hardstanding) and again at decommissioning phase.

Broadcasting installations

While interference would not necessarily rule out the siting of a wind farm development, they would only be acceptable where the developer could either maintain the transmission or provide alternative arrangements at no cost to those whose service was disrupted. In either case, early consultation with the relevant network provider would be expected.

Based on the above policy context, it is believed that the proposed development will meet the requirements set out and is appropriate to its location.

6 LANDSCAPE AND VISUAL ASSESSMENT

The purpose of this assessment is to ascertain the likely landscape and visual effects of the proposed development at Land southwest of Auchentiber Bridge:

- *An assessment of landscape effects deals with the effects of change and development on landscape as a resource*[20]*;*
- *An assessment of visual effects deals with the effects of change and development on the views available to people and their visual amenity*[21]*.*

The aim is to identify, analyse and report all predicted effects caused by the proposed wind energy development upon a baseline area.

Potential effects resulting from the construction and operation of a wind energy development are dependent on the scale of development, site specifics and the characteristics/sensitivity of area receptors.

The study and assessment of all potential effects is to enable identification and rating of predicted effects.

The assessment does not make a distinction between positive and negative effects, as this will depend on the subjective perspective of the viewer. It is acknowledged that there is wide ranging opinion regarding wind technology developments, their appearance and whether they are a positive or negative addition to the landscape. This is often a highly emotive issue, both for and against.

No judgement is made on whether the effect is beneficial or adverse. A neutral perspective has been adopted and the assessment is limited to assessing the scale of the effect, based on a professional judgement informed through desk and field survey.

[20] Guidelines for Landscape and Visual Impact Assessment. 3rd Edition (LI-IEMA: 2013), Chapter 5, Assessment of Landscape Effects, Paragraph 5.1

[21] Guidelines for Landscape and Visual Impact Assessment. 3rd Edition (LI-IEMA: 2013), Chapter 6, Assessment of Visual Effects, Paragraph 6.1

TABLE 6.1: POTENTIAL LANDSCAPE AND VISUAL EFFECTS

Development Activity	Impacting Element(s)	POTENTIAL Effects	Potential Receptors
Construction Phase	Construction traffic (Vans, HGV, crane, excavators); Construction personnel; Temporary construction plant; Access tracks & crane pad	Short-term (temporary) impacts on physical landscape and landscape amenity	Protected/National & Regional Designated Landscapes; Local residents; Tourists/visitors; Commuters and road users
Operational Phase	Wind turbine(s); Access tracks and infrastructure; Meter house	Medium to Long-term impacts on physical landscape and landscape amenity; Combined (cumulative) impacts with other area wind energy developments	
Decommissioning Phase	Construction traffic (Vans, HGV, crane, excavators); Construction personnel; Temporary construction plant; Access tracks & crane pad	Short-term (temporary) impacts on physical landscape and landscape amenity	

Impacts, Effects and Significance

- Impact – Defined as the action being taken.
- Effect – Defined as the change resulting from that action.

These terms are used consistently and with the same meaning throughout this assessment.

Professional judgement is used to identify the likely significance of effects with an approach proportionate to the scale of the development.

TABLE 6.2: SCALE OF SIGNIFICANCE[22]

More Significant	↓	- Loss of mature or diverse landscape elements, features, characteristics, aesthetics or perceptual qualities. - Effects on rare, distinctive, particularly representative landscape character. - Loss of lower-value elements, features, characteristics, aesthetic or perceptual qualities. - Loss of new, uniform, homogenous elements, features, characteristics, qualities. - Effects on areas in poorer condition or of degraded character. - Effects on lower-value landscapes.
Less Significant		

Landscape sensitivity relates to how significant the impact from change is on the character of the landscape. Landscape capacity refers to the ability of the landscape to accommodate change without significant alteration to the fabric or character of the area. Determining the significance of the impact from a development involves assessing the sensitivity of the receptor and the magnitude of change that would result from the proposal.

Wind turbines are important in meeting the energy needs of the future, providing a local, clean energy source; this positive must be weighed against the landscape and visual impacts of the development.

[22] Guidelines for Landscape and Visual Impact Assessment. 3rd Edition (LI-IEMA: 2013), Chapter 5, Assessment of Landscape Effects, Figure 5.10

6.1 Methodology

The methodology for this assessment is, as best practice states, flexible. In assessing the landscape and visual effects, this assessment has been undertaken in a systematic and comprehensive manner, in accordance with the most recent best practice guidance. In order to make this as objective as possible, the development has been considered alongside specific policies and material considerations, such as the sensitivity and capacity of the landscape.

The report has been prepared in coordination with the Competent Authority (Inverclyde Council) and follows current guidance and industry standard documentation including, but not limited to:

Scottish Government Policies and Publications:

- Scottish Executive (1999) *Planning Advice Note 58. Environmental Impact Assessment*;
- Scottish Executive (2000) *National Planning Policy Guidance 6: Renewable Energy Technologies*;
- Scottish Executive (2002) *Planning Advice Note 45. Renewable Energy Technologies (Revoked, though principles apply)*; and
- Scottish Executive (2010) *Scottish Planning Policy (SPP)*[23]

Scottish Natural Heritage Policy and Guidance:

- Countryside Agency & SNH (2004) *Landscape Character Assessment, Guidance for England and Scotland*;
- Countryside Agency & SNH (2004) *Landscape Character Assessment - Topic Paper 6: Techniques and Criteria for Judging Capacity and Sensitivity*;
- SNH (2001) *Guidelines on the Environmental Impacts of Windfarms and Small Scale Hydroelectric Schemes*;
- SNH (2003) *SNH Policy Statement No 02/03: Policy on Wildness in Scotland's Countryside*;
- SNH (2005) *Cumulative Effect of Windfarms; Version 2 revised 13.04.05*;
- SNH (2006) *Visual Representation of Windfarms – Good Practice Guidance*;
- SNH (2005) *Environmental Assessment Handbook, 4th edition*;
- SNH (2009) *SNH Policy Statement No. 02/02: Guidance on Onshore Renewable Energy*;
- SNH (2009) *Siting and Designing Windfarms in the Landscape*;
- SNH (2012) *Assessing the Cumulative Impact of Onshore Development*; and
- SNH (2012) *Assessing the Impact of Small-scale Wind Energy Proposals on the Natural Heritage*.

[23] SPP: http://www.scotland.gov.uk/Topics/Built-Environment/planning/National-Planning-Policy/newSPP

Regional & Local Development Planning:

- Inverclyde Local Plan 2005;
- Inverclyde Local Plan 2005: *Interim Supplementary Planning Guidance for Wind Farms* (March, 2010);
- Small Scale Wind Energy Developments: *Interim Planning Policy Position Statement, Inverclyde Council* (March, 2011); and
- Glasgow and the Clyde Valley Strategic Development Plan (May, 2012).

Visual Representation and Reporting Aids:

- Landscape Institute & Institute of Environmental Management & Assessment (LI-IEMA: 2002) *Guidelines for Landscape and Visual Impact Assessment. 2nd Edition*;
- Landscape Institute & Institute of Environmental Management & Assessment (LI-IEMA: 2013) *Guidelines for Landscape and Visual Impact Assessment. 3rd Edition*; and
- Landscape Institute (2011) *Photography and Photomontage in Landscape and Visual Impact Assessment*.

A desktop study has been undertaken to collect data on the existing landscape including landscape character and landscape designations.

Field visits have been undertaken to assess the existing landscape, visual amenity and likely potential impacts of the development.

The likely Zone of Theoretical Visibility (ZTV)

The ZTV (see Figure 6.24 and 6.25) has been created using Resoft™ Windfarm software. This has been used to identify the potential extent of the visual envelope and to help pick representative viewpoints within a study distance suitable to the scale of the development.

Field visits have been undertaken to assess the existing landscape, visual amenity and likely potential impacts of the development.

Photography and Visualisations

The ZTV has been used to select representative viewpoints for study, which have been agreed with the Council in advance (20/03/2013).

Field visits have been conducted and photos taken from these viewpoints. Field visits allow for a more detailed assessment of the existing landscape, visual amenity and likely potential impacts of the development than the desktop study alone.

Photomontages have been developed using industry-standard Resoft™ WindFarm Release 4 software. Visualisations are attached (see Figures 6.2 to 6.21). These have been compiled as per industry standards for scale and range.

Camera: Fujifilm™ Finepix HS20 EXR digital SLR with 50mm lens equivalent.

Using these methods, the scale of potential direct and indirect impacts of the proposed wind energy development has been assessed. The significance of impact at various stages of the development upon the following has been considered:

- Landscape character;
- Landscape designations;
- Visual receptors; and
- The sensitivity of the landscape and visual amenity.

The lifespan of the development is expected to be approximately 25 years, so for the basis of this assessment it has been assumed that all impacts and effects assessed are medium to long-term, and it will be possible to return the land to its former use after decommissioning. This may change if the development were to be disassembled prior to this time, which would reduce the predicted impacts of this proposal.

Potential impacts on historical sites or cultural features and their setting are discussed in more detail in Chapter 7 of this Environmental Report: Historic Environment.

6.2 Scope of Study Area

The study area for a development should, by good practice, be determined between the Landscape Architect/Planner and the Competent Review Authority.

The extent of study area should always be proportionate to the scale and size of the proposed application and all potential impacts as perceived and determined.

To ensure a fair and consistent methodology for calculating the size of study area, the following table has been developed[24] to match proportionally the height (to blade tip) of the proposed turbine with a suitable study area.

TABLE 6.3: STUDY AREA DETERMINATION

Height of Turbine	**140m**	**120m**	**100m**	**80m**	**60m**	**40m**	**20m**
Size of LVIA study area. Distance from the outermost turbine(s)	21km	18km	15km	12km	9km	6km	3km

For the scale/height of the proposed development at land southwest of Auchentiber Bridge, an appropriate study area for the preparation of this Landscape and Visual Impact Analysis has

[24]This calculation has been developed through experience by **Scottish Borders Council** in their Technical Note for Landscape and Visual Impact Assessment for Wind Energy Developments (October 2011): http://www.scotborders.gov.uk/downloads/file/1800/landscape_and_visual_impact_assessment

This is technical advice created and used by Landscape Architects for Scottish Borders Council, in the FINAL Main Report on landscape and visual guidance established in October 2012.

been set at **15km**.The scope of the study area has been determined by aligning this study to the previous applications at High Mathernock Farm and Priestside Farm, as per Inverclyde Council instruction of 01/07/2013. An initial radius of 30km has been used to complete a Zone of Theoretical Visibility (ZTV) as an Area of Search. For a wind turbine of this size a detailed Study Area of 15km has been deemed an appropriate radius to cover the likely impacts. Analysis follows the method as set out in 'Guidelines for Landscape and Visual Assessment' Third Edition 2013, published by the Landscape Institute.

6.3 Assessment Criteria for Landscape & Visual Impact and Effect

i. Nature of Landscape (Sensitivity)

The nature (sensitivity) of the landscape to the type of development proposed is often pre-determined by the Competent Authority through commissioned capacity studies of wind energy development. In many cases such landscape sensitivity has to be professionally determined through a combination of parameters as set below.

The determination of the nature of landscape to wind energy development is defined as: *high, medium, low or negligible*.

Parameters to determine Nature of Landscape (Sensitivity):

- **Landscape Scale** – Topography, landform, elevation change, land cover, land use;
- **Landscape Designations** – Recognised values as identified by local, regional and national designations:
  - National Scenic Area (NSA); Regional Scenic Area (RSA)
  - Area of Great Landscape Value (AGLV); Area of Outstanding Natural Beauty (AONB)
  - Designed Garden and Landscape (DG&L)
- **Landscape Character and Overall Quality** – This is a professional evaluation of the landscape based on all characteristics; and
- **Landscape Views** – The form of the landscape on extent of views:
  - Open/Closed
  - Long/Short Distance
  - Simple/Complex (Diverse)

ii. Nature of Visual Receptor (Sensitivity)

The nature or sensitivity of visual receptors to the type of proposed wind energy development is to be professionally determined through a combination of parameters as set below.

Parameters to determine Nature of Visual Receptor (Sensitivity):

- **Viewpoint Location** – Distance, elevation and orientation to proposed development;
- **Context of View** – Primary/Secondary/Tertiary view. Guided, designed vista. Open panoramic view;
- **Activity of Receptor** – Is the receptor absorbed on a specific activity or focussed on the landscape; and
- **Frequency and Duration** – Single/Repeated. Constant/Broken. Short/Long.

The determination of nature of visual receptor (sensitivity) to wind energy development is defined as: *high*, *medium*, *low* or *negligible* as set below.

TABLE 6.4: NATURE OF VISUAL RECEPTOR (SENSITIVITY)

High	Residential buildings (primary views); Main tourist sites and key recognised viewpoints and beauty spots; Users of important outdoor facilities inclusive of regionally and nationally designated trails, cycle networks and rights-of-way whose focus and attention is on the landscape; Key important landscape features (recognised physical/cultural/historic attributes and merit).
Medium	Residential buildings (secondary views); Road/rail/other transport routes travelling past or through the landscape.
Low	Residential buildings (tertiary views); Users of outdoor facilities NOT focussed on the landscape; Commercial/business buildings and workers/commercially engaged pedestrians NOT focussed on the wider landscape.
Negligible	Views from heavily industrialised or other such impacted areas; Workers at their place of work; People absorbed in other such activities.

The magnitude of change on visual amenity from a specific viewpoint is defined as *substantial*, *moderate*, *slight* or *negligible*. This is determined by professional judgement using a number of parameters of study.

Parameters to determine magnitude of change (Impact) on Visual Receptors:

- **View Angle** – Is the view to/from the receptor and proposed development direct, or at an oblique angle;
- **Duration** – Are the effects on views sustained or short-lived;
- **Field of View** – What degree of the overall field of view is impacted by the proposed development;
- **Background Setting** – Is the proposed development absorbed by back-dropping or exposed by sky-lining; and

- **Context** – What is the extent of other man-made elements and built structures (vertical elements) within views. This can absorb a development OR provide visual scaling and effects of clutter.

iii. Magnitude of Effect on Landscape and Visual Receptors

The significance of an identified, specific landscape or visual effect has been assessed to a criterion of *major*, *moderate*, *minor* or *none*.

The following matrix table is used to determine the significance of effects by correlating the nature of the landscape/visual receptor and magnitude of change (Impact). This matrix is used for both nature of landscape and visual amenity against predicted magnitude of change:

TABLE 6.5: MATRIX TO DETERMINE SIGNIFICANCE OF EFFECTS

	Magnitude of Change (Impact)			
Nature of Landscape and Visual Receptor	***Substantial***	***Moderate***	***Slight***	***Negligible***
High	Major	Major/Moderate	Moderate	Moderate/Minor
Medium	Major/Moderate	Moderate	Moderate/Minor	Minor
Low	Moderate	Moderate/Minor	Minor	Minor/None
Negligible	Moderate/Minor	Minor	Minor/None	None

Within Section: "TOWN AND COUNTRY PLANNING – PART II OF THE REGULATIONS, Paragraph 12" of THE ENVIRONMENTAL IMPACT ASSESSMENT (SCOTLAND) REGULATIONS, 1999 – CIRCULAR 8, 2007[25] it is noted:

12. Where the EIA procedure shows that a project will have an adverse impact on the environment, it does not automatically follow that planning permission must be refused. It remains the task of the planning authority to judge each planning application on its merits within the context of the Development Plan, taking account of all material considerations, including the environmental impacts.

As such, it should be noted significant effects as defined by this Scottish Government regulatory document as stemming from *major* or *major/moderate* landscape or visual effects determined through assessment need not be unacceptable per varied parameters of site and area specifics and may be fully reversible.

While every project can be reviewed under the predetermined significance (effect) identified by use of the matrix, it must be understood that this is solely a tool for quantifying and therefore the correct methodology and analysis of potential effects must make allowance for the utilization of professional judgment.

[25]The Environmental Impact Assessment (Scotland) Regulations, 1999 – Circular 8 (2007)
http://www.scotland.gov.uk/Resource/Doc/205337/0054660.pdf

6.4 Landscape Context

Landscape, as defined for purposes of study, has been summarised and recognised as:

"Landscape is about the relationship between people and place. It provides the setting for our day-to-day lives. The term does not mean just special or designated landscapes and it does not only apply to the countryside. Landscape can mean a small patch of urban wasteland as much as a mountain range, and an urban park as much as an expanse of lowland plain. It results from the way that different components of our environment - both natural (the influences of geology, soils, climate, flora and fauna) and cultural (the historical and current impact of land use, settlement, enclosure and other human interventions) - interact together and are perceived by us. People's perceptions turn land into the concept of landscape" Landscape Character Assessment, Swanwick and Land Use Consultants (2002)[26].

i. Landscape Character Areas

The landscape character of the study area and its environs are considered at national, regional and local level.

Preliminary desk based analysis for this landscape character area assessment is conducted with information taken from the study commissioned by Scottish Natural Heritage (SNH) of the region: *Glasgow and the Clyde Valley Landscape Character Assessment* (LCA)[27] By Land Use Consultants (1999).

This publication, together with all field studies, forms the basis of the landscape character assessment and potential impacts and effects of the proposed development. Text taken directly from the Landscape Character Assessment (LCA) report is highlighted in italics.

A map of Landscape Character Type designations within the study area (15km) is included as Figure 6.1.

[26] Landscape Character Assessment – Guidance for England and Scotland, Para 1.11: http://www.heritagecouncil.ie/fileadmin/user_upload/Planning/LCA_CPD/LCA_CPD_Sep_2011/Reports/LCA_Guidance_for_England_and_Scotland.pdf

[27] SNH, Glasgow and the Clyde Valley Landscape Character Assessment (Report 116), http://www.snh.org.uk/publications/on-line/LCA/glasgow.asp

Regional Character Area (RCA):

The study area lies within the Clyde Basin Farmlands RCA, as defined by the SNH Landscape Character Assessment for the region:

- *The Clyde Basin Farmland Regional Character Area encompasses the majority of the Clyde Basin lowland area that envelopes the urban conurbation of Glasgow. From the surrounding moorlands, plateau farmlands provide an intermediary stage that proceeds to rolling farmlands and floodplain farmlands.*
- *Urban settlement forms the focus of the central area of this RCA, primarily the city of Glasgow, with its associated green corridors and urban green spaces.*
- *The land in this area has been utilised for industrial purposes, including mineral working, with resultant derelict and damaged land witnessed within this RCA. Industrial heritage features are a characteristic of this landscape as is current mineral working.*
- *Historic settlements, archaeological sites, castles and historic houses with accompanying estates are particularly prevalent in the Clyde Basin Farmland, which possesses a number of designed landscapes.*
- *Further key features include river landscapes; pastoral and occasional arable farming; and deciduous woodland comprising farm woodland and field boundary trees.*

Landscape Character Type (LCT):

The landscape of the Clyde Basin Farmland has been subdivided into smaller units or types of which the site falls into 6a Rugged Upland Farmland LCT.

6a Rugged Upland Farmland

- *The Rugged Upland Farmland Landscape develops to the North and West of Newton Mearns from the less rocky and uneven Plateau farmlands and Plateau Moorlands. In a North-Westerly direction this landscape advances into an area of Rugged Moorland.*
- *Moderate farmland is interrupted by a rough and undulating landscape characterised by abrupt and rocky hills comprising millstone grits and carboniferous limestone with additional and less frequent areas of basalt. A number of the valleys of the region have been flooded to form reservoirs that serve the urban areas of the region.*
- *Beech and pine woodland is a widespread feature within the rugged and hilly environment of this landscape character type, while more shielded and comfortable regions are utilised for sheep farming on areas of improved pasture. The sites of former estates are characterised by distinguishing beech hedgerow trees.*
- *While urban areas are not a feature of this landscape character type, infrastructural elements that serve urban conurbations can be widely noted. Electricity infrastructure, masts, forestry and occasional suburban development are also representative of land use change within this LCT. In addition to this, the noise of aircraft arriving and departing Glasgow Airport is a further feature.*

Landscape Character Type adjacent to the development site:

Rugged Moorland Hills – 20a Renfrewshire Heights (0.4km Northeast)

- *The North-Western extent of the Clyde Basin is characterised by the Renfrewshire Heights, comprising rugged uplands of resistant basalt that have survived the glacial and fluvial processes of erosion. Summits in these hills reach 500 metres.*
- *Within this LCT, extensive areas of peatland are coated in rough grasslands and heathers. Field boundaries are defined by walls or hedges and can be seen to border the initial slopes to the periphery of the hills, with some fields now abandoned and colonised by bracken or rushes. Hills featuring streams, burns and wetlands can also include areas of particular nature conservation interest.*
- *Commercial conifer plantations within the rugged moorland hills of the Renfrewshire Heights are defined within the River Gryfe headwater valley.*
- *Sporadic and dispersed settlement distribution is witnessed in this less hospitable upland area. Conversely, a number of reservoirs have been built in this LCT to provide water to more significant neighbouring urban areas, such as Glasgow. Renfrewshire Heights also fulfils a recreational purpose for the Greater Glasgow region.*

6.5 Assessment of Effects on Landscape and Landscape Amenity

The following section considers the potential effect of the proposed turbine during its operation on the landscape and landscape amenity.

In regards to natural heritage sensitivity, Scottish Natural Heritage (SNH) have produced guidance as to which areas in Scotland have most scope for wind energy development, and which have the most significant constraints[28]. Three broad zones are identified:

Zone 1*: Lowest natural heritage sensitivity* (Greatest opportunity for a large number of developments);

Zone 2*: Medium natural heritage sensitivity* (Some sensitivity, yet scope to accommodate development to an appropriate scale); and

Zone 3*: High natural heritage sensitivity* (Greatest constraint to development, some sites may be appropriate, yet full investigation into impact on natural heritage is likely to be required).

Land southwest of Auchentiber Bridge is within the lowest sensitivity (Zone 1)[29]. As stated by SNH, Zone 1 is characterised as follows:

The Rugged Upland Farmland landscape is common to land classified within this zone. The natural environment has been subjected to a number of changes including improved pasture and the construction of infrastructural elements of energy and water provision to urban areas. Whilst cumulative impacts within this area are still important, it is appropriate that it accepts changes in landscape character in order to accommodate development. Despite this, there may still be important local natural heritage sensitivities to wind turbine development. A measured and considered approach to scale, design and siting of the proposed scheme should be adopted.

[28] SNH (2009) Strategic Locational Guidance for Onshore Wind Farms in Respect of the Natural Heritage: Policy Statement No. 02/02*:* http://www.snh.gov.uk/docs/A247182.pdf
[29] SNH Map 5, Zones of Natural Heritage http://www.snh.gov.uk/docs/C208975.pdf

ii. Development Impact – Landscape Effects

Landscape Effects are defined as: "*The effects on landscape as a resource*"[30].

Two factors must be considered when determining the nature of effect on landscape by the impact of development: The sensitivity of the receptor and the magnitude of change from the proposal. The former was investigated through the examination of the fabric, character and quality of the landscape. The terms used, 'Magnitude of Change (Impact)' and 'Nature of Effect', are explained in Table 6.6. Table 6.7 considers the potential effect of the proposed development during its operation on the landscape resource

TABLE 6.6: DEFINITION OF SIGNIFICANCE CRITERIA

Criteria for Magnitude of Change (Impact):	
Negligible	Where the proposal would cause no discernible deterioration or improvement
Slight	Where the proposal would cause a barely perceptible change
Moderate	Where the proposal would cause a noticeable change
Substantial	Where the proposal would cause a significant change
Criteria for Nature of Effect:	
Neutral	The proposal would complement the scale, landform and pattern of the landscape; maintain existing landscape quality
Minor	The proposal would not quite fit into the landform and scale of the landscape; affect an area of recognised landscape character
Moderate	The proposal would be out of scale with the landscape or at odds with the local pattern and landform; will leave an adverse impact on a landscape of recognised quality
Major	The proposal would result in effects that cannot be fully mitigated and may cumulatively amount to a severe adverse effect; are at a considerable variance to the landscape degrading the integrity of the landscape; will be substantially damaging to a high quality landscape

[30] Guidelines for Landscape and Visual Impact Assessment. 3rd Edition (LI-IEMA: 2013), Chapter 3, Principles and Overview of Processes, Figure 3.4

TABLE 6.7: ASSESSMENT OF EFFECTS OF DEVELOPMENT ON THE LANDSCAPE AND LANDSCAPE AMENITY

Landscape Classification	Landscape Character Area (LCA): Clyde Basin Farmlands[31]
Nature of Receptor	*Medium/Low*
Magnitude of Change (Impact)	*Slight:* The Clyde Basin Farmlands possess a broad range of landscape characteristics, varying from river landscapes and historic settlements, to diverse glacial and fluvial glacial topographic features, such as drumlins. This LCA has witnessed significant industrial activity; historically through mineral working of the land and via present day electrical infrastructure and reservoirs. The development of a wind energy project at Land southwest of Auchentiber Bridge would represent a new vertical element within this landscape. The proposed turbine would be incorporated within the existing pastoral farmlands that provide a topographic transition between surrounding moorland to rolling farmlands and floodplain farmlands beyond. The varied relief, accentuated by associated farm woodlands and field boundary trees, would be able to accommodate appropriately sited development without the loss of its traditional features.
Nature of Effect	*Minor*

[31] SNH, Glasgow and the Clyde Valley Landscape Character Assessment (Report 116) –Section 5, Part 1: Introduction http://www.snh.org.uk/pdfs/publications/LCA/glasgow/section5part1.pdf

Landscape Classification	Landscape Character Type (LCT): Rugged Upland Farmland[32]
Nature of Receptor	*Medium/Low*
Magnitude of Change (Impact)	*Moderate:* The Rugged Upland Farmland LCT constitutes a moderately undulating and rugged pastoral farmland landscape interrupted by occasional rocky escarpments. Farm woodlands of beech and pine stands accentuate the small-medium scale topography of the region, with additional field boundary planting also experienced. A number of valley troughs have been flooded and utilised as water provision for urban areas of Glasgow and the Clyde Valley. Electricity infrastructure is also a common vertical element viewed across this LCT. In order to conserve the rural character of the Rugged Upland Farmland, the development has been sited within a less prominent, shallow relief avoiding ridgelines or hill summits. The result of suitable siting of this turbine scale and typology is a congruous feature within the context of existing vertical structures and topography. The development would also be afforded significant backclothing when viewed within the broader landscape.
Nature of Effect	*Moderate/Minor*

Landscape Classification	Landscape Character Type (LCT): Rugged Moorland Hills[33]
Nature of Receptor	*Medium/Low*
Magnitude of Change (Impact)	*Slight:* The Rugged Moorland Hills form the north-western portion of the Clyde Basin and are defined by the rugged peaks of The Renfrewshire Heights that ascend to 500 metres in places. Widespread rough grasslands and heathers colonise significant peatlands, with bracken and rushes populating a number of now abandoned fields, bordered by walls or hedges. These moorland hills feature streams, burns and wetlands with the River Gryffe valley characterised by commercial conifer plantation. The positioning of the development, coupled with the rough, undulating topography and areas of significant tree cover will prevent visibility being set against the skyline, therefore reducing the visual impact upon the natural character of this LCT.
Nature of Effect	*Minor*

[32]SNH, Glasgow and the Clyde Valley Landscape Character Assessment (Report 116) – Section 5, Part 7: Rugged Upland Farmland
http://www.snh.org.uk/pdfs/publications/LCA/glasgow/section5part7.pdf
[33]SNH, Glasgow and the Clyde Valley Landscape Character Assessment (Report 116) – Part 20: Rugged Moorland Hills
http://www.snh.org.uk/pdfs/publications/LCA/glasgow/section5part21.pdf

Landscape Classification	National Landscape Designations: Loch Lomond and the Trossachs National Park[34]
Nature of Receptor	*High*
Magnitude of Change (Impact)	*Negligible:* Loch Lomond and the Trossachs National Park enters the northern extent of the study area, on a north northeast orientation at a viewing distance from the site of development of approximately 11.5km. The National Park boasts a broad spectrum of landscape characteristics encompassing rolling lowlands in the south, the elevated mountains of the Trossachs Hills in the north, in addition to numerous lochs, rivers and woodlands. The ZTV (Figure 6.24) indicates a limited area to the north of Helensburgh, on the very northern boundary of the park that will potentially experience views of the proposed development. Considering the viewing distance of approximately 11.5km across the Firth of Clyde, encompassing Helensburgh and Port Glasgow, the intrusion within elevated long distance views from this sensitive receptor will be negligible.
Nature of Effect	*Minor*

Landscape Classification	National Landscape Designations: Loch Lomond National Scenic Area[35]
Nature of Receptor	*High*
Magnitude of Change (Impact)	*Negligible:* This National Scenic Area lies within the boundary of Loch Lomond and the Trossachs National Park but only pertains to the distinctive landscape features surrounding Loch Lomond, the largest area of freshwater in Britain. The natural heritage of Loch Lomond is unique, possessing a diverse population of fish species. This freshwater environment also provides a habitat for numerous rare water plants including Thread Rush, the Least Water Lily and the Slender Naiad. As with the assessment of impact for Loch Lomond and the Trossachs National Park, the magnitude of change experienced at this receptor will be negligible due to the viewing distance from development (approximately 11.5km). The calculated ZTV indicates very limited areas of potential visibility at this significant distance across Helensburgh, The Firth of Clyde and Port Glasgow.
Nature of Effect	*Minor*

[34]Loch Lomond and the Trossachs National Park - Habitats
http://www.lochlomond-trossachs.org/learning/our-habitats/menu-id-304.html
[35]Loch Lomond and the Trossachs National Park - Habitats
http://www.lochlomond-trossachs.org/learning/our-habitats/menu-id-304.html

Landscape Classification	Regional Landscape Designations: Kilpatrick Hills – Area of Great Landscape Value[36]
Nature of Receptor	*High-Medium*
Magnitude of Change (Impact)	*Slight:* The Kilpatrick Hills are located north of the Clyde Estuary between the towns of Dumbarton and Milngavie. The hills rise to slightly over 400 metres (AOD) with a landform that constitutes a succession of stony rounded summits emanating from gentle, sinuous plateau. Blanket bog, rough grassland and a number of coniferous plantations constitute the majority of the land cover within the region. The ZTV (Figure 6.24) illustrates that the visual envelope of the development at Land southwest of Auchentiber Bridge will extend to the south-western slopes of the Kilpatrick Hills, above Dumbarton. There are a number of Council Core Paths[37] that traverse the south-western slopes, weaving between the coniferous plantations, resulting in few opportunities for views to the site of development approximately 11.3km to the southwest. Positions that are within the visual envelope of the scheme will not experience significant negative impact. The viewing distance in addition to topographic and settlement screening from Dumbarton and Port Glasgow, across the Clyde Estuary, result in only a slight magnitude of change.
Nature of Effect	*Moderate/Minor*

[36]Kilpatrick Hills, Central Scotland Green Network Study, March 2011 – West Dunbartonshire Council/ Land Use Consultants http://www.west-dunbarton.gov.uk/media/2030233/kilpatrick_hills_csgn_study_final_report.pdf

[37]Inverclyde Council Core Paths Plan, March 2009 http://www.inverclyde.gov.uk/planning-and-the-environment/planning/access-paths-and-rights-of-way/core-paths-plan?pg=1

Landscape Classification	Regional Landscape Designations: West Renfrewshire Hills – Area of Great Landscape Value[38]
Nature of Receptor	*High-Medium*
Magnitude of Change (Impact)	*Slight:* The West Renfrewshire Hills are 6.4km southwest of the proposed site of development, within the boundary of Clyde Muirshiel Regional Park. This area of upland heath and blanket bog is characterised by major electricity infrastructure, plantation woodland and reservoirs. The ZTV (Figure 6.24) has shown only restricted views of the development will be achieved to the north of the designation, west of Loch Thom. The level of incursion into these middle distance views (6.5km) will be mitigated by the intervening topography as well as the commercial conifer plantations of the River Gryfe valley. The majority of views will be excluded by these landscape features giving a negligible resultant effect upon the receptor.
Nature of Effect	*Moderate/Minor*

Landscape Classification	Regional Landscape Designations: Clyde Muirshiel Regional Park
Nature of Receptor	*High-Medium*
Magnitude of Change (Impact)	*Slight:* Clyde Muirshiel Regional Park encompasses a large area of land to the west of the site of development, at a distance of approximately 1.5km at its nearest point. The footprint of the park reaches from the south of Greenock and the Clyde Estuary in the north, to West Kilbride and Dalry, North Ayrshire in the south. The park has developed its own guidance document: "*Framework Guidance Document on Windfarm Development Proposals Affecting Clyde Muirshiel Regional Park*", (February 2008)[39]. This document segments the 108 square miles of park into different landscape types, each with a designated landscape value determined by sensitivity and tranquillity ratings. While the proposed development is not within the park boundary, it is recognised that three of the landscape types defined within the guidance framework will fall within the scheme's visual envelope: Upland Core, Duchal Moor and the Loch Thom Area. The Upland Core Area constitutes the greatest level of elevation within the park and comprises primarily upland heath and blanket bog land cover,

[38] Clyde Muirshiel Regional Park – A Framework Guidance Document on Windfarm Development Proposals Affecting Clyde Muirshiel Regional Park, February 2008
http://www.clydemuirshiel.co.uk/wp-content/uploads/2011/03/Framework-Guidance-for-Windfarms.pdf

[39] Clyde Muirshiel Regional Park – A Framework Guidance Document on Windfarm Development Proposals Affecting Clyde Muirshiel Regional Park, February 2008
http://www.clydemuirshiel.co.uk/wp-content/uploads/2011/03/Framework-Guidance-for-Windfarms.pdf

	resulting in unsuitability for tree planting. The park assessment document details this area as having the highest level of tranquillity and sensitivity to development. However, visual receptors in this area will be limited and with a viewing distance of 7.4km from the proposed development, the level of intrusion to long distance views is deemed to be slight. Duchal Moor represents a section of the regional park protruding east towards Kilmacolm. It has been awarded medium/high sensitivity to development in combination with the highest level of tranquillity. Blanket bog and upland heath land cover is also prevalent here. This area of the park is closer to the site of development and therefore will experience more significant views of the scheme. However, screening will be provided by existing mixed plantation woodland and topography, with limited receptors within an area of limited access. The Loch Thom designation of Clyde Muirshiel Park represents the most impacted area in terms of land-use. A number of reservoirs, significant electricity infrastructure and commercial coniferous plantation have been established here. This is reflected in an assessment of reduced levels of tranquillity but the area maintains a medium to high sensitivity to development. As the closest landscape type to the site of development, the Loch Thom area constitutes a significant portion of the scheme's visual envelope. While visual receptors in the area will be limited due to scarce human presence and restricted access, the recreational nature of the park means occasional users may find themselves within the visual envelope of the project in the 2-5km range. However, none of the Visitor's Centres of the park are within the ZTV of the scheme. The Loch Thom area will also benefit from significant screening due to the topography of the region as well as extensive commercial conifer plantation. The overall magnitude of change for Clyde Muirshiel Regional Park as a whole is determined to be slight.
Nature of Effect	*Moderate/Minor*

Landscape Classification	Regional Landscape Designations: Site of Important Nature Conservation (S.I.N.C) – Devol Road Upland (0.5 km East)
Nature of Receptor	*Low*
Magnitude of Change (Impact)	*Negligible:* The Devol Road Upland S.I.N.C is a conservation designation based upon the value of heathland flora. It is therefore of low sensitivity to visual impact. Any physical impact upon it from the development of a turbine out with the boundary of this S.I.N.C is highly unlikely. The magnitude of change experienced will be negligible.
Nature of Effect	*Minor/None*

Landscape Classification	Garden and Designed Landscape: Duchal House[40]
Nature of Receptor	*High*
Magnitude of Change (Impact)	*Negligible:* Lying approximately 4km southeast of the development site is Duchal House, an estate originally established by the Porterfield family in 1544. Duchal House lies to the southwest of the settlement of Kilmacolm, experiencing views extending across Duchal Moor to the southwest of the estate. The indicative ZTV calculated (Figure 6.24) illustrates that views toward the proposed development will only be experienced in the narrower northern tip of the estate. This area of the estate is characterised by significant policy planting and lime avenues. Further significant screening will be experienced from the built structure of Kilmacolm meaning any resultant views of the development will be negligible and the associated magnitude of change experienced low.
Nature of Effect	*Minor*

Landscape Classification	Garden and Designed Landscape: Finlaystone House[41]
Nature of Receptor	*High*
Magnitude of Change (Impact)	*Negligible:* On the south bank of the Firth of Clyde, Finlaystone House can be found flanked by the village of Langbank and the town of Port Glasgow. The mansion building of the estate is set on a whinstone cliff with the northern extent of the policies defined by the A8 trunk road and the Old Greenock Road dictating that to the south. The ZTV generated (Figure 6.24) identifies potential visibility of the development from only a very limited portion of the estate, on the southeast periphery. This area of the estate is populated by dense deciduous woodland including Sycamore, Ash, Wych Elm, Oak and Horse Chestnut specimens. This, in combination with the 4km viewing distance and intervening topography, will result in a negligible magnitude of change at Finlaystone House.
Nature of Effect	*Minor*

[40]Historic Scotland, Inventory of Designed Gardens and Landscapes, Duchal House
http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2400:15:0::::GARDEN,SEARCH:GDL00146,duchalhouse#importance
[41]Historic Scotland, Inventory of Designed Gardens and Landscapes, Finlaystone House
http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2400:15:0::::GARDEN,SEARCH:GDL00180,Finlaystone#summary

Landscape Classification	Gardens and Designed Landscape: Overtoun House[42]
Nature of Receptor	*High-Medium*
Magnitude of Change (Impact)	*Negligible/Slight:* Overtoun House is located approximately 10.6km east northeast of the proposed turbine development; situated northeast of Dumbarton. The property is currently utilised as a Christian Centre for Hope and Healing. This 150 year old listed Baronial building possesses relatively extensive, tree covered grounds within a small, enclosed river valley which screens the majority of the grounds from views across the broader landscape. The property itself stands on a plateau with the Lang Craigs to the east and enjoys views across the Firth of Clyde. As a private property that is well concealed from public roads, the estate is not a tourist attraction and therefore has a lower sensitivity. The ZTV (Figure 6.24) indicates that views to the site of development will be achieved from the northeast and southwest portions of the estate. However, significant screening will be afforded to these areas by Barwood Hill, found to the south of Overtoun House. This wooded knoll forms part of the policy planting of the estate comprising a deciduous mix of beech and oak. This, in conjunction with the 10.6km viewing distance to the development across the Clyde Estuary, results in a minor impact to this receptor.
Nature of Effect	*Minor*

[42]Historic Scotland, Inventory of Designed Gardens and Landscapes, Overtoun House
http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2400:15:0::::GARDEN,SEARCH:GDL00306,overtounhouse#summary

Landscape Classification	Gardens and Designed Landscapes: (Figure 6.27) Formakin[43] Rosneath[44] Ardgowan[45] Balloch Castle[46] Glenarn[47] Gareloch House[48] Linn Botanic Garden[49]
Nature of Receptor	*High*
Magnitude of Change (Impact)	*Negligible:* The indicative ZTV calculated (Figure 6.24) illustrates that the positioning of these Gardens and Designed Landscapes (Figure 6.27) as well as viewing direction and screening will preclude these sensitive receptors from experiencing views of the proposed development, resulting in a negligible magnitude of change.
Nature of Effect	*None*

[43]Historic Scotland, Inventory of Designed Gardens and Landscapes, Formakin
http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2400:15:0::::GARDEN,SEARCH:GDL00183,formakin#summary
[44]Historic Scotland, Inventory of Designed Gardens and Landscapes, Rosneath
http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2400:15:0::::GARDEN,SEARCH:GDL00328,rosneath#summary
[45]Historic Scotland, Inventory of Designed Gardens and Landscapes, Ardgowan
http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2400:15:0::::GARDEN,SEARCH:GDL00021,ardgowan#summary
[46]Historic Scotland, Inventory of Designed Gardens and Landscapes, Balloch Castle
http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2400:15:0::::GARDEN,SEARCH:GDL00042,ballochcastle#summary
[47]Historic Scotland, Inventory of Designed Gardens and Landscapes, Glenarn
http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2400:15:0::::GARDEN,SEARCH:GDL00193,glenarn#summary
[48]Historic Scotland, Inventory of Designed Gardens and Landscapes, Gareloch House
http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2400:15:0::::GARDEN,SEARCH:GDL00187,garelochhouse#summary
[49]Historic Scotland, Inventory of Designed Gardens and Landscapes, Linn Botanic Garden
http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2400:15:0::::GARDEN,SEARCH:GDL00401,linnbotanicgarden#summary

iii. Overall Landscape Impact

The predicted impact of the proposed development on the landscape character of the area is likely to be *slight* and will be more greatly felt at a localised level on the landscape's character, resources and amenity.

There would be an overall *minor* effect on landscape and landscape amenity.

The effect of the development would diminish within the greater scale of the Landscape Character Type as the landform reduces the prominence in the overall scale of the Landscape Character Area inclusive of similar wind energy development. Full cumulative impact and effect is analysed further in the LVIA.

The determination of *moderate/minor* effect (and under) on landscape and landscape amenity is non-significant as specified in The Environmental Impact Assessment (Scotland) Regulations, 1999 (Circular 8, 2007)[50].

[50]The Environmental Impact Assessment (Scotland) Regulations, 1999 – Circular 8 (2007) http://www.scotland.gov.uk/Resource/Doc/205337/0054660.pdf

6.6 Development Impact – Visual Effects

Visual Effects are defined as: "*The effects on views and visual amenity*" [51].

"*An assessment of visual effects deals with the effects of change and development on the views available to people and their visual amenity… assessing visual effects is not a quantitative process*"[52].

The extent of the visual impact from this development has been assessed through calculating the ZTV shown in the Appendix (Figures 6.24 & 6.25). The ZTV has identified a number of areas within the surrounding landscape where the development has the potential to be visible from.

Visual impacts relate to the change of views and visual amenity for a number of identified visual receptors: Residents (dwellings, settlements); workers; travellers (road, rail, pedestrians, cyclists, other); and visitors (destinations/promoted landscapes & viewpoints/attractions).

As illustrated through the ZTV, due to the topography and elevation of the site and surrounding landscape, the development will be evident over a localised proportion of Inverclyde (majorly localised to 5km, moderate to 10km and slight over 15km).

The highest concentration of receptors/settlements to experience an increased number of views of the development will be the south-eastern edge of Port Glasgow and the towns of Kilmacolm and Bridge of Weir, combined with their loose fringe of dwellings and farmsteads positioned along the Strathgryfe River valley. From the south, upland areas of Clyde Muirshiel Regional Park, including Duchal Moor and the Upland Core, will experience views of the development. West of Land southwest of Auchentiber Bridge, the Loch Thom area of Clyde Muirshiel Regional Park will experience more broken and fragmented views of the development, with screening provided by commercial coniferous plantations and natural topography at a range of 2-5km. Views in this area will become more prevalent within the 2km viewing distance. Northeast of the proposal, the visual envelope will encompass the southern slopes of the Kilpatrick Hills with distant, screened views experienced over an 11km distance. Northern areas around Helensburgh and towards Loch Lomond and the Trossachs National Park will see less obtrusive outlying views across the Firth of Clyde to the site of development.

[51] Guidelines for Landscape and Visual Impact Assessment. 3rd Edition (LI-IEMA: 2013), Chapter 3, Principles and Overview of Processes, Figure 3.4

[52] Guidelines for Landscape and Visual Impact Assessment. 3rd Edition (LI-IEMA: 2013), Chapter 6, Assessment of Visual Effects, Para. 6.1

iv. Predicted Visual Impact:

Operational Stage

The photomontages (see Figures 6.2 to 6.21) have been developed to illustrate views of the proposal from various points in the surrounding landscape based upon greatest significance. These viewpoints aim to be representative of the various receptors in the area and have been used to assess the likely visual impact of this turbine development from a range of distances and elevations. As noted previously, the location of viewpoints has been agreed in advance with David Ashman at Inverclyde Council via email correspondence on 20.3.2013. The terms used for 'Magnitude of Change' and 'Significance of Impact' are explained in Table 6.8

TABLE 6.8: DEFINITIONS OF SIGNIFICANCE CRITERIA

Criteria for Magnitude of Change:	
Negligible	No discernible visual impact
Slight	Where the proposal would cause a barely perceptible visual impact
Moderate	Where the proposal would cause a noticeable visual deterioration
Substantial	Where the proposal would cause a significant visual deterioration
Criteria for Nature of Effect:	
None	The proposal will maintain existing visual quality
Minor	The proposal will slightly intrude on local visual receptors; slightly affect important visual amenity
Moderate	The proposal will noticeably intrude on local visual receptors; will leave an adverse impact on the recognisably important visual amenity
Major	The proposal will result in visual effects that cannot be fully absorbed and may cumulatively amount to a significant adverse visual effect; are a considerable intrusion to visual receptors degrading the integrity of the receptor; will be substantially damaging to visual amenity

Viewpoint 1: From Junction of A761 Port Glasgow Road and Auchenbothie Road (E234736 N670204) facing in a northwesterly direction.

Drawing Ref: Figure 6.2 and 6.3

This vantage point lies at the junction of the A761 and Auchenbothie Road and represents the relatively open and expansive views experienced as road users travel north between Kilmacolm and Port Glasgow. The A761 navigates the undulating, medium-scale topography that is clothed in improved pastoral farmland bounded by mixed woodlands, hedgerows and dry stone walls. While settlement within this field of view is restricted to a single property, infrastructural elements associated with urban conurbations are experienced as electricity pylons cross the landscape. The property within views from this vantage point benefits from significant screening from development by mature tree cover. The consented, but yet to be constructed, High Mathernock Farm development will be evident from this position as it crests the Devol Road upland area northeast of the site proposed. This presents a prominent vertical feature in an elevated position with an absence of any scaling influence. The proposed scheme has been sited within an area of suitable elevation to allow it to sit comfortably within the scale of the broader landscape, not exceeding the scope of the rolling topography. From this position, the development is scaled by the existing mixed woodland that borders Auchenbothie Road, as well as the rugged upland landscape of heathers and rough grassland belonging to the Renfrewshire Heights.

- The visual sensitivity of the visual receptor: *Medium* as the receptors will mainly be road users.
- The magnitude of impact: The proposed development will have *slight* impact to existing views from this vantage point.
- Significance of effect on this receptor: *Moderate*/*Minor* as the proposed scheme will have areas of visibility from this roadway due to the position of the turbine in relation to the direction of travel and availability of view corridors to road users.

Viewpoint 2: From Auchenbothie Mains (E234371 N670750) facing in a northwesterly direction.

Drawing Ref: Figure 6.4 and 6.5

Auchenbothie Mains constitutes a residential dwelling and associated farm out-buildings on the northwest outskirts of Kilmacolm, 0.5km due west of the A761. This viewpoint encapsulates the broad characteristics of the Rugged Upland Farmland LCT. Gradually undulating farmland is interrupted by abrupt and rocky hill forms within an exposed and rugged landscape. Field boundaries are defined by dry stone walls or hedges that ascend the slopes bordering hill summits, with less elevated improved pasture land being used for livestock grazing. Tree cover is more sporadic, with individual areas of farm woodland complemented by field boundary planting of deciduous trees. Settlement is confined to separate farm and cottage properties, each with related expanses of woodland screening. Electrical infrastructure can be seen progressing across the vista in a westerly direction, representing a significant man-made influence upon the landscape that regularly exceeds the horizon. The proposal at Land southwest of Auchentiber Bridge will form a new vertical element on this horizon; however, this will not be wholly incongruous with the scale of topography or existing infrastructure components within the view. The considered siting of the development, avoiding prominent summits or ridgelines, affords a less intrusive visual presence when viewed from this vantage point.

- The visual sensitivity of the visual receptor: *Medium-High* as the receptors will mainly be residents of Auchenbothie Mains.
- The magnitude of impact: The proposed development will have *slight* impact to existing views from this vantage point.
- Significance of effect on this receptor: *Moderate/Minor* as the proposed scheme will represent a new vertical element upon the horizon as experienced from this residential receptor, although the main orientation of the property is aligned in a southeasterly direction away from development.

Viewpoint 3: From Junction of B788 Auchenfoil Road and Auchentiber Road (E230811 N671797) facing in a southeasterly direction.

Drawing Ref: Figure 6.6 and 6.7

Auchentiber Road is the main access road to the north of the development site meeting the B788 Auchenfoil Road at this point, 0.8km northwest of the turbine proposed at Land southwest of Auchentiber Bridge. The rough upland farmland of improved pasture forms the main land use at this point. This expansive view is curtailed by dense coniferous plantation between the receptor and development site. The presence of electricity infrastructure is particularly prevalent in this area, as it is within the landscape character type as a whole. This electrical infrastructure represents a significant vertical feature that forms a dominant component of the horizon and provides a scaling influence for the introduction of a new development; being experienced in such close proximity.

- The visual sensitivity of the visual receptor: *Low-Medium* as the receptors will mainly be road users.
- The magnitude of impact: The proposed development will have *moderate* impact to existing views from this vantage point.
- Significance of effect on this receptor: *Moderate/Minor* as the proposed scheme will present areas of visibility from this roadway due to the position of the turbine in relation to the direction of travel and availability of view corridors to road users. However, this will not form a wholly incongruous addition to existing infrastructural elements of this view.

Photomontage 4: From Junction of B788 Auchenfoil Road and A761 Bridge of Weir Road (E236249 N668434) facing in a northwesterly direction.

Drawing Ref: Figure 6.8 and 6.9

This viewpoint is located at the junction of the B788 Auchenfoil Road and A761 between Bridge of Weir and Kilmacolm to the west of Knapps Loch, a man-made fishing loch. The foreground of this viewpoint is dominated by the mixed dense policy woodland of Duchal House Garden and Designed Landscape. The horizon extends to the rugged and uneven peaks of the upland farmland area to the northwest, with small groupings of coniferous plantation woodland visible. Settlement and infrastructure elements are at a minimum within this field of view which is a popular tourist photography point due to panoramic views of Clyde Muirshiel Regional Park. To the northeast of the development at Land southwest of Auchentiber Bridge, the consented High Mathernock turbine and application for two turbines at Priestside Farm are positioned in an elevated region representing a distinct component of this view, lacking any scaling features. The considered siting of the proposed development, within more modest topography, allows it to be completely screened from view by shelterbelt planting and policy woodland. The magnitude of impact upon this receptor will therefore be negligible.

- The visual sensitivity of the visual receptor: *Medium-High* as the receptors will mainly be road users and tourists/visitors.
- The magnitude of impact: The proposed development will have *negligible* impact to existing views from this vantage point.
- Significance of effect on this receptor: *None as* the proposed scheme will not be evident from this vantage point.

Photomontage 5: From Cycle Route 75 (E234171 N671220) facing in a westerly direction.

Drawing Ref: Figure 6.10 and 6.11

Cycle Route 75 follows Auchenbothie Road south from the town of Port Glasgow on the Clyde Estuary to this vantage point, 2.6km due east of the development site. Within this context, the Rugged Upland Farmland LCT provides more sheltered regions that accommodate improved pasture for sheep farming. Large field boundaries are defined by neat hedgerows and some dry stone walls, with arable fields ascending the slopes of the uplands. Small groupings of farm woodland can be seen to accompany clusters of farm buildings, with further mixed planting bordering more elevated fields. The more distant landscape of moorland hills forms the horizon to the southwest with the colouring of heathers and rough grassland forming contrasting tones. Any alteration to the existing horizon as a result of the development at Land southwest of Auchentiber Bridge will be significantly screened from view by a combination of varied topography and an area of farm woodland to the east of the site. From this vantage point the consented High Mathernock Farm development and application for two turbines at Priestside Farm are clearly located upon the crest of the Devol Road, above Pennytersal Farm.

- The visual sensitivity of the visual receptor: *High-Medium* as the receptors will mainly be walkers and cyclists.
- The magnitude of impact: The proposed development will have *slight* impact to existing views from this vantage point.
- Significance of effect on this receptor: *Minor/none as* the extent of visibility of the proposed development will be limited to the extreme tip of the rotor blades above farm woodland, minimising the visual intrusion of the scheme.

Photomontage 6: From Port Glasgow Golf Course, Devol Road Uplands (E232168 N672612) facing in a southwesterly direction.

Drawing Ref: Figure 6.12 and 6.13

Port Glasgow Golf Club is situated southwest of the town of Port Glasgow, with this viewpoint located at the highest point of elevation on Devol Road, 1.3km from the proposed development site. This viewpoint enjoys open and uninterrupted views across the upland region of the Renfrewshire Heights. Rough grasslands and heathers colonise widespread peatlands, with bracken and rushes also present. Field boundaries are less structured and the more elevated regions in the distance are characterised by peaks of resistant basalt rock. The River Gryfe valley is defined by a number of commercial coniferous plantations which are clearly seen from this vantage point. Similarly to other viewpoints analysed, electrical infrastructure is a man-made introduction to the landscape with pylons tracking east to west through this view corridor. While the proposed development introduces a new vertical element into this region, the proposal will benefit from being fully back-dropped by both topography and plantation woodland. The resultant impact upon limited receptors within the visual envelope is not deemed to be out of context with either the existing infrastructure within the landscape, or the scale of the landscape of the region as a whole.

- The visual sensitivity of the visual receptor: *Low-Medium* as the receptors will mainly be walkers and golfers.
- The magnitude of impact: The proposed development will have *Moderate* impact to existing views from this vantage point.
- Significance of effect on this receptor: *Moderate/Minor as* the extent of visibility of the proposed development will be significant to a limited number of receptors in such close proximity to the site of development.

Photomontage 7: From High Mathernock Farm (E232477 N671172) facing in a westerly direction.

Drawing Ref: Figure 6.14 and 6.15

High Mathernock Farm is situated on Auchentiber Road, the local access road that borders the northern extent of the site of development, approximately 3.5km south of Port Glasgow. An open and exposed landscape of large scale fields, defined by broken hedgerows, fencing and stone walls is characterised by areas of coniferous plantation, farm woodland and deciduous shelter belt planting. The ruggedly sinuous landform of the foreground has been adapted as improved pasture and radiates towards the greater elevations of the moorland hills. As with other points within this region, the presence of electricity infrastructure is apparent throughout the field of view, running from north to south. The proposal forms a clear vertical addition to the landscape when experienced within this vista. At a viewing distance of 1km, the development will constitute a disparate feature as experienced from Auchentiber Road, a single track access road. The orientation of the residential buildings at High Mathernock Farm lies on a north-south alignment, while this view represents the westerly scope of the farm.

- The visual sensitivity of the visual receptor: *Medium-High* as the receptors will mainly be residents and road users.
- The magnitude of impact: The proposed development will have *Moderate* impact to existing views from this vantage point.
- Significance of effect on this receptor: *Moderate* as the extent of visibility of the proposed development will be significant, to a limited number of receptors, in such close proximity to the site of development.

Photomontage 8: Access road to Horsecraigs – The Haven (E231470 N670698) facing in a northerly direction.

Drawing Ref: Figure 6.16 and 6.17

The Haven is situated east of the B788 Auchenfoil Road, approximately 0.9km south of the proposed development site and 4km south of Port Glasgow. The upland farmland landscape extending to distant views is sparse in features, with large scale fields bounded by stone walls. Some fields in the foreground have been improved for sheep farming with boundaries defined by deciduous shelter belt planting. Poorer quality agricultural land is also present with rush, bracken and rough grasses colonising fields with degrading boundaries at the base of existing electricity infrastructure; a main feature of both this region and this vantage point. Land use in this region has also evolved to accommodate commercial coniferous plantation with a significant block forming a central, dense component of this view. The Haven offers accommodation, and a structured programme of Christian principles, to assist young men aged 17-49 involved in the misuse of drugs and alcohol to acquire the life skills necessary for future independent living. The site of development lies to the north with the orientation of The Haven's residential buildings on a north-westerly and north-easterly alignment, resulting in the proposed development forming a peripheral component of views from this property. While it is recognised that the proposed development constitutes a new vertical element of the vista, its dominance within this field of view is mitigated by the greater scaling influence of existing electricity infrastructure.

- The visual sensitivity of the visual receptor: *Medium-High* as the receptors will mainly be residents.
- The magnitude of impact: The proposed development will have *Moderate* impact to existing views from this vantage point.
- Significance of effect on this receptor: *Moderate* as the extent of visibility of the proposed development will be significant to a limited number of receptors in such close proximity to the site of development. However, the visual dominance of the proposal is moderated by existing large-scale electricity infrastructure.

Photomontage 9: Knockbuckle Road – Northwest of Kilmacolm (E234470 N670135) facing in a northwesterly direction.

Drawing Ref: Figure 6.18 and 6.19

Kilmacolm is a village located on the A761 between Bridge of Weir to the south and Port Glasgow to the north, lying approximately 3.3km southeast of the proposed development site at Land southwest of Auchentiber Bridge. Knockbuckle Road leaves the northwestern extent of Kilmacolm, entering the rolling farmland landscape with the River Gryfe Valley beyond. The distant hills are characterised by craggy summits with occasional stands of farm woodland and coniferous plantation. Farm properties with associated agricultural buildings form the only sporadic settlement pattern within this field of view, with each afforded a level of screening by shelter belt planting. Electricity infrastructure is again present; breaking the horizon to the northwest. Mixed shelter belt planting and farm woodland is present within the foreground of this view with some fields improved for livestock grazing. Other areas are populated by rushes and rough grassland with field boundaries defined by dry stone walls and intermittent fencing. The consented High Mathernock Farm proposal and two turbines at Priestside Farm are seen to the northeast of the development site; sited in elevated positions forming perceptible additions to the horizon as experienced from this roadway corridor. The proposal at Land southwest of Auchentiber Bridge represents a scaled component of this skyline, is not out of scale or incongruous with the existing topography and baseline infrastructure elements.

- The visual sensitivity of the visual receptor: *High-Medium* as the receptors will mainly be residents and road users.
- The magnitude of impact: The proposed development will have *Slight* impact to existing views from this vantage point.
- Significance of effect on this receptor: *Moderate/Minor* as the proposed scheme will have areas of visibility from this roadway due to the position of the turbine in relation to the direction of travel and availability of view corridors to road users.

Photomontage 10: Port Glasgow High School (E234524 N672637) facing in a southwesterly direction.

Drawing Ref: Figure 6.20 and 6.21

Port Glasgow High School is located on the southeastern periphery of the town, approximately 3.2km northeast of the proposed development site. Views from this location are indicative of those experienced by road users of the A761 trunk road that links Port Glasgow with Kilmacolm to the south. Views to the development are at an oblique angle to the direction of travel. This vantage point also represents the visual impact experienced by the residential dwellings that fringe the south-eastern extent of Port Glasgow. The Rugged Moorland Hills of the distant view are characterised by roughly undulating topography blanketed in areas of peatland, heather and rough grassland. Areas of arable farming cloth lower slopes of hills. Gorse, bracken and rushes are also a distinguishing feature, colonising areas not utilised by agriculture. Electricity pylons break the skyline, both in the foreground and distant horizon, with their use in the region forming a component of its baseline character. When considered from this vantage point, the application at Priestside Farm and consented development at High Mathernock Farm flank the Auchentiber Bridge proposal. These bordering schemes are sited upon an initial ridgeline of the upland topography, giving them a level of visual dominance, short of back-clothing or a scaling influence. The scheme proposed has been sited within an area of shallow relief, allowing its introduction to be more readily absorbed by the intervening topography. The small proportion of the turbine blade that will be visible is fully back-clothed by distant landforms resulting in a negligible magnitude of change to the existing view.

- The visual sensitivity of the visual receptor: *Medium-High* as the receptors will mainly be residents and road users.
- The magnitude of impact: The proposed development will have *Slight* impact to existing views from this vantage point.
- Significance of effect on this receptor: *Minor* as the extent of visibility of the proposed development will be limited to the extreme tip of the rotor blades above the ridgeline of the intervening topography.

v. Tourist and Main Routes Sequential Impacts/Visual Receptors

TABLE 6.8: ASSESSMENT OF EFFECTS ON VISUAL RECEPTORS

Receptor	Local Access Route: Auchentiber Road (Minor Road)
Nature of Receptor	*Low*
Magnitude of Change (Impact)	*Substantial impact:* Views of the proposed development by users of Auchentiber Road will be clear for the majority of the roadway, with the close proximity of the road resulting in the development creating a new visual focus for users. A volume of screening is provided by topography to the south of Priestside Cottage, shielding a 0.7km proportion of the road. This landscape character type is defined by a number of coniferous plantations that provide limited screening at intermittent stages. The impact of development would increase with harvesting of areas of forestry. This particular section of the local road network is characterised by narrow, single track access roads that negotiate field boundaries to link Auchenbothie Road with the B788, Auchenfoil Road (Figure 6.7).
Nature of Effect	*Moderate.*

Receptor	Regional Access Routes: B788 – Auchenfoil Road
Nature of Receptor	*Low*
Magnitude of Change (Impact)	*Moderate impact:* The B788 Auchenfoil Road will first experience intermittent views of the proposal at Land southwest of Auchentiber Bridge as the road turns south, cresting the topography to the East of Knocknairs Moor as it leaves Greenock, northwest of the proposed development site. Visibility of the development will then be constant for a period of 1.2km, at an oblique angle to either direction of travel as the road descends into the Gryfe River Valley. Small areas of the road are afforded screening from stands of commercial coniferous plantation and farm woodland; however for the most part, the development will form a new vertical element on the skyline, scaled by existing electricity infrastructure. The B788 then begins to sweep eastwards towards Kilmacolm and Bridge of Weir, with a further 0.9km of the roadway experiencing less significant and better screened views of the proposal before it is screened entirely by the topography of Jock's Craig.

Nature of Effect	*Moderate/Minor.*
Receptor	Local Access Route: Auchenbothie Road
Nature of Receptor	*Low*
Magnitude of Change (Impact)	*Moderate impact:* Auchenbothie Road runs on a north-south orientation providing a single track, access link between the southern periphery of Port Glasgow and the main route south, the A761 Port Glasgow to Kilmacolm road. An initial 0.7km section of the road will possess partial views of the development which will form a slight change to the horizon line, above topography, at an angle to the direction of travel. This alteration will be minor in its overall impact and effect upon road users. The development is then screened from view by the undulant upland topography of the rugged upland farmland LCT, before returning into view as the road begins to arc southeast towards Kilmacolm (as indicated by Figure 6.3 and Figure 6.11). The introduction of this new structure on the horizon is then visible for a further 0.9km as Auchenbothie Road meets the A761 Port Glasgow Road.
Nature of Effect	*Moderate/Minor.*

Receptor	Main Roads: A761
Nature of Receptor	*Medium*
Magnitude of Change (Impact)	*Slight impact:* While the calculated ZTV (Figure 6.24) indicates the visual envelope of the development will extend to incorporate a proportion of the A761, differing land-use will screen much of the road from significant effects (Figure 6.21). As the main A-Class road connecting a number of conurbations with the A8 to the north and the A737 in the south, the A761 incorporates a series of built up areas along its route. Bridge of Weir, Kilmacolm and the easterly extent of Port Glasgow represent areas of built environment that will screen the roadway from significant views of the development. The intervening sections of the A761 that interlink each settlement will experience transient and broken views towards the proposal. To the east of Port Glasgow, 3.2km northeast of the development site, views towards the development will be perpendicular to both directions of travel with some screening provided by the upland landform. This topography then precludes any further visual interruption until South Craigmarloch, where the introduction of the turbine will again become evident (Figure 6.3). Road users will continue to experience intermittent views of the development at an oblique angle to the direction of travel, until the A761 enters the town of Kilmacolm, 4km east of Land southwest of Auchentiber Bridge, where shelter belt planting bordering the road and then the built structure of the town itself will completely screen views. As the A761 departs Kilmacolm to the south towards Bridge of Weir, the frequency and extent of views of the development steadily decline (Figure 6.9) with a significantly reduced level of visibility. The brief glimpses of development in the area are found at a viewing distance of over 6km, with the proposed development representing a minor element within the wider landscape.
Nature of Effect	*Moderate/Minor.*

Receptor	Regional Access Routes: B786
Nature of Receptor	*Medium/Low*
Magnitude of Change (Impact)	*Negligible impact:* The B786 progresses south towards Lochwinnoch from the western edge of Kilmacolm, bordering the eastern extent of Clyde Muirshiel Regional Park. The built structure of Kilmacolm will protect the initial portion of the roadway from any visual intrusion from the proposal with some minor, partial views for the first 0.2km outwith Kilmacolm. The B786 is then sheltered from broader landscape visibility for over 3km by rolling upland topography populated by substantial, dense areas of established deciduous trees. The ZTV (Figure 6.24) provided indicates a pocket of the development's visual envelope occupying a stretch of the B786 from Mid Gibblaston (6.5km southeast of Land southwest of Auchentiber Bridge) to Bankbrae (7.5km southeast of the development site). While this is identified within the theoretical visibility area, the dense deciduous woodland and variances in landform between the roadway and the development location will prevent significant changes in skyline profile. Beyond this range, short, intermittent glimpses of the development may be achieved for three areas of roadways not in excess of 500 metres. Considering a viewing distance of up to 9.5km, with intervening topography and stands of both deciduous and coniferous plantation, any resultant view of development would be negligible in its duration and significance.
Nature of Effect	*Minor.*

Receptor	Regional Access Routes: A814
Nature of Receptor	*Medium/Low*
Magnitude of Change (Impact)	*Negligible impact:* Following the north bank of the Clyde Estuary, the A814 links Dumbarton with Helensburgh to the northwest. The calculated ZTV indicates two areas of potential visibility along this transport corridor: a 1km length of Glasgow Road as the A814 branches off the A82 and a 1.5km distance of Cardross Road after the A814 crosses the River Leven to the west of Dumbarton. The direction of travel of the A814 is orientated on an east to west alignment, while the site of development lies 7.3km to the south across the Clyde Estuary, with significant screening provided by the built environment of Dumbarton and Port Glasgow. This will result in negligible changes to the skyline profile with slight glimpses of development afforded at a considerable viewing distance.
Nature of Effect	*Minor.*

Receptor	Regional Access Routes: A813
Nature of Receptor	*Medium/Low*
Magnitude of Change (Impact)	*Negligible impact:* The A813 links the north of Dumbarton with Balloch to the east of Alexandria, towards Loch Lomond. The ZTV (Figure 6.24) produced indicates a 2.8km distance of the A814 from Dumbarton to Bonhill that will fall within the visual envelope of the development. Land southwest of Auchentiber Bridge lies 10km southwest of this point, with the settlements of Port Glasgow and Dumbarton occupying the intervening topography in addition to the Firth of Clyde. It is therefore assessed that the magnitude of change experienced by road users via occasional, slight and distant views at an oblique angle to the direction of travel will be negligible.
Nature of Effect	*Minor.*

Receptor	Main Roads: A82
Nature of Receptor	*High/Medium*
Magnitude of Change (Impact)	*Negligible impact:* The A82 is an arterial route connecting the City of Glasgow with Loch Lomond and the Trossachs National Park as well as the northwest beyond. The theoretical visibility of the proposed development indicates a 3.7km length of the A82, as it dissects Dumbarton, where views of the proposal may be achieved 10km northeast of the turbine location. With the site perpendicular to the direction of travel, it is deemed that visual interaction at this viewing distance will be highly mitigated by the settlements of Dumbarton and Port Glasgow, as well as the Clyde Estuary. Therefore, the short-lived glimpses of development are seen to be negligible within the view and comfortably accommodated by this receptor.
Nature of Effect	*Minor.*

Receptor	Main Roads: A737
Nature of Receptor	*Medium*
Magnitude of Change (Impact)	*Negligible impact:* This A-Class trunk road connects the North Ayrshire region with the City of Glasgow via the M8, 14km southeast of the site of development. A brief section, 1.6km in length, has been identified within the visual envelope of the proposal, as it divides Linwood to the north and Johnstone to the south. Given the speed and direction of travel, the development at Land southwest of Auchentiber Bridge will form a minor component of snap-shot views that possess significant screening from built structure over a prolonged viewing distance, giving a negligible to imperceptible impact upon receptors.
Nature of Effect	*Minor.*

Receptor	Regional Access Routes: A817
Nature of Receptor	*Medium*
Magnitude of Change (Impact)	*Negligible impact:* The A817 forms the very northerly extent of the 15km study area, linking the A82 on the western shore of Loch Lomond with Garelochhead, 14.6km north of Land southwest of Auchentiber Bridge. The main alignment of the road corridor is on an east-west orientation, with the site of development at a significant viewing distance to the south, away from the main direction of travel. Considering the depth of screening afforded via Helensburgh, Port Glasgow, the Firth of Clyde, as well as the topographic features of the landscape and the dense coniferous plantation that borders the roadway, any change experienced in visual amenity at this location will be negligible.
Nature of Effect	*Minor.*

Receptor	Regional Access Routes: A818
Nature of Receptor	*Medium*
Magnitude of Change (Impact)	*Negligible impact:* The A818 departs the northern periphery of Helensburgh, travelling in a broadly easterly direction to connect with the A82 on the western banks of Loch Lomond. A brief 0.7km section of this trunk road has been identified through the ZTV for the proposed development as having potential views of the turbine, as the road leaves the periphery of Helensburgh. This partial view corridor lies 12.4km north of the development site, shielded by the urban forms of Helensburgh and Port Glasgow. On the northern bank of the Clyde Estuary, at a substantial distance from the site of development, the changes in visual scale or skyline profile at this receptor will be negligible.
Nature of Effect	*Minor.*

Receptor	Recognised Walking Routes: 37B- Devol Road Core Path
Nature of Receptor	*Low*
Magnitude of Change (Impact)	*Moderate impact:* The Devol Road Core Path (37B) crosses the easterly extent of Devol Moor, leaving the southern edge of Port Glasgow towards the site of development. Reaching an altitude in excess of 200 metres, the path borders Port Glasgow Golf Course before entering the Devol Road Upland S.I.N.C (Site of Importance for Nature Conservation), so designated for its heathland flora. The elevation of topography at this position affords the Devol Road Core Path open and uninterrupted views of the Renfrewshire Heights upland region. The 1.5km of the path to the north of Auchentiber Road will experience a full view of the development forming a focal point of the vista to the southeast, at an oblique angle to the direction of travel, as can be seen from the photomontage generated from this viewpoint (Figure 6.13). However, this will be experienced by a limited number of receptors with the resultant impact not deemed out of context with the scale of existing infrastructure or the landscape of the region.
Nature of Effect	*Moderate/minor.*

Receptor	Recognised Walking Routes: Core Path 29B, 29C & 29D - Garshangan Woods to Auchentiber Road
Nature of Receptor	*Medium*
Magnitude of Change (Impact)	*Moderate impact:* Core Path 29B, 29C and 29D follow the path of the Gryfe River Valley, starting within the area of commercial coniferous plantation to the south of Gryfe Reservoir No. 1. At this point, Core Path 29B will be screened from the visual envelope of the development by coniferous plantation woodland and undulating topography, 3.2km west of the development site. As Path 29B continues in an easterly direction, it crosses the River Gryfe and joins Path 29C. This path is within the visual envelope of the scheme and will experience a series of partial views of the development in alignment with users walking east, without forming a dominant feature of the view. Path 29C then converges with Auchenfoil Road, where Core Path 29D continues along Auchentiber Road, represented by Figure 6.7. At such close proximity; 140 metres from the site of development at its nearest point; the introduction of a new, vertical feature will create an additional focus to the existing large scale electrical infrastructure. Users travelling in a westerly direction along Path 29D on Auchentiber Road will experience clear views of the development for the majority of the path's length. Occasional screening will be achieved by the topography, as the path weaves towards High Mathernock Farm, south of Priestside Farm.
Nature of Effect	*Moderate.*

Receptor	Recognised Walking Routes: Core Path 43 – High Mathernock to Chapel Farm
Nature of Receptor	*Medium*
Magnitude of Change (Impact)	*Moderate impact:* Core Path 43 links High Mathernock Farm with Chapel Farm, on a north-south alignment, 0.9km southeast of the site of development. Users of this path travelling in a southerly direction will experience limited views of the proposal as it would be positioned at an oblique angle to the direction of travel, out with the main foreground view. Those travelling from Chapel Farm towards High Mathernock Farm in a northerly direction will find more significant visual intrusion, with the scheme proposed in close proximity; 1.1km to the northwest. While not in direct alignment with the direction of travel and within an area of existing electrical infrastructure, the proposed development will constitute a new man-made feature without altering the visual scale of this landscape.
Nature of Effect	*Moderate.*

Receptor	Recognised Walking Routes: Core Path 44 – Mountblow to Gryfeside Farm
Nature of Receptor	*Medium*
Magnitude of Change (Impact)	*Slight impact:* The Mountblow to Gryfeside Farm Core Path runs broadly parallel to Core Path 43, linking Auchentiber Road with the B788 Auchenfoil Road to the south. While the northern proportion of the path is identified as lying within the visual envelope of the development, the path benefits from significant screening by deciduous shelter belt planting bounding the path of the Gryfe Water to the west and south of Gryfeside Farm. The intervening topography between the site of development and the midpoint of Core Path 44, at a distance of 3km, provides further screening allowing very limited areas of visibility. Beyond this point, the calculated ZTV indicates no further visual interruption from the development at Land southwest of Auchentiber Bridge.
Nature of Effect	*Moderate/minor.*

Receptor	Recognised Walking Routes: Core Path 32C – Corlick Hill
Nature of Receptor	*Medium*
Magnitude of Change (Impact)	*Slight/negligible impact:* Core Path 32C borders the summit of Corlick Hill from Burnhead travelling south to Mansfield Bridge, north of Gryfe Reservoir No. 2. This medium gradient, grass path will possess no visibility of the development at its northwesterly extent, with the calculated ZTV (Figure 6.24) indicating only occasional, intermittent visibility as the path skirts Gryfe Reservoir No. 2 at Mansfield Bridge. In this position, only a small glimpse of the scheme will be seen over a viewing distance of 2km with screening provided by deciduous and coniferous planted areas. This addition will represent only a minor element of the broader view and the magnitude of change experienced will be slight to negligible for this receptor.
Nature of Effect	*Minor.*

Receptor	Recognised Walking Routes: Core Path 57D – Auchenleck to Kilmacolm
Nature of Receptor	*Medium*
Magnitude of Change (Impact)	*Moderate/slight impact:* The Auchenleck to Kilmacolm Core Path (57D) runs adjacent to Auchenbothie Road, 2.2km northeast of the development site at its closest point. The calculated ZTV (Figure 6.24) indicates a 250 metre section of the Core Path, as it departs to the south of Auchenleck, where partial views of the proposal will be achieved forming a minor addition to the vista. The next three quarters of a kilometre will be screened from views of the proposal in both directions of travel. From this point on, users following the path in a southeasterly direction will be moving away from the scheme and therefore it will be out with the main foreground viewing corridor. For walkers or cyclists travelling from Kilmacolm in a northwesterly direction, changes in the skyline will be seen as the development at Land southwest of Auchentiber Bridge forms a new vertical component from this raised position, as the Path occupies the old railway embankment raised above existing topography. However, this addition will not constitute the creation of a new visual focus or alteration of the scale of the viewed landscape.
Nature of Effect	*Moderate/minor.*

Receptor	Recognised Cycle Routes: Cycle Route 75
Nature of Receptor	*Medium/Low*
Magnitude of Change (Impact)	*Moderate/slight impact:* Cyclists using Cycle Route 75 will experience the development in intermittent and segmented partial views upon the horizon line, above the topography and tree planting. While this will represent a change to the existing skyline, the proposal will constitute a minor alteration to this receptor as the increased pace of this recreational activity will temper sensitivity to slight changes at such proximity; 2.5 km at the its nearest point.
Nature of Effect	*Moderate/minor.*

vi. Summary of Findings (Overall Effect) on Tourist and Main Routes Sequential Impacts/Visual Receptors

From the findings of the study it can be determined that the overall effect of the proposed development on tourist and main routes sequential impacts/visual receptors is *moderate/minor*.

The proposal can be accommodated within the existing landscape and infrastructural characteristics of the region, with current land-use and man-made features lessening the visual intrusion in the broader landscape.

In close proximity to the site of development, where evident, the proposal will not form an incongruous feature alongside current man-made, vertical components of the locality.

6.7 Cumulative Landscape and Visual Impact Assessment

This section deals with the predicted cumulative effects on visual amenity caused by the proposed development, collectively with all known, existing and proposed wind turbine applications within proximity of Land southwest of Auchentiber Bridge, the main requirement being an assessment that is proportionate to the impacts.

Effects of cumulative landscape impact:

- "*Can impact on either the physical fabric or character of the landscape, or any special values attached to it*"[53]
- *"Cumulative impacts can be defined as the additional changes caused by a proposed development in conjunction with other similar developments."* [54]

Per guidance set forth by SNH, "*Assessing the Cumulative Impact of Onshore Wind Energy Development* (2012)":

8. A clear, transparent and detailed assessment process is needed to understand the impacts of a proposed windfarm development when it is seen alongside others in the area. The process needs to identify the overall impacts which may arise from a group of projects and distinguish the contribution of each individual project to these. The assessment should take account of existing windfarms, and those which are consented or at application stage.

33. The key principle for all cumulative impact assessments is to focus on the likely significant effects and in particular those which are likely to influence the outcome of the consenting process.

*37. Once an application has been submitted and is accompanied by a complete and satisfactory Environmental Statement** (*Note: only EIA required)*, any further assessment to take account of new proposals is likely to cause delay. The determining authority may consider that it cannot reasonably require further cumulative assessment by the applicant. In some locations the level of development is such that cut off dates should be considered to enable applications to progress.*

The study is designed to analyse effects of like developments and also follows guidance set forth by SNH, "Siting and Design of Small Scale Wind Turbines of between 15 and 50 metres in Height (2012)[55]" to ensure concise and fair reporting of effects caused by the impact of various scales of development within an area.

[53] SNH, Assessing the Cumulative Impact of Onshore Wind Energy Developments, http://www.snh.gov.uk/docs/A675503.pdf
[54] Guidelines for Landscape and Visual Impact Assessment, 2002 (Landscape Institute and IEMA).
[55] SNH, Siting and Design of Small Scale Wind Turbines of between 15 and 50 metres in Height, http://www.snh.gov.uk/docs/A675507.pdf

vii. Cumulative Study Area

SNH guidance for determining the area of search and study for a Cumulative Landscape and Visual Impact Assessment relating to wind energy development pertains to large scale wind farming. As such, a suitably scaled approach needs to be implemented and followed for non-EIA Environmental Reporting on smaller-scale turbine applications.

The cumulative study area for a development should, by good practice, be determined between the Landscape Architect/Planner and the Competent Review Authority.

The extent of cumulative study area should always be proportionate to the scale and size of the proposed application and all potential cumulative impacts as perceived and determined.

SNH guidance, "*Assessing the Cumulative Impact of Onshore Wind Energy Development* (2012)"[56] Paragraph 57 states:

This is generic guidance only. The number of proposals in an area and the timing of applications give rise to development scenarios of varying complexity. Professional judgement should inform the scope of the study to be undertaken.

For the scale/height of the proposed Land southwest of Auchentiber Bridge development, an appropriate cumulative study area of **20km** has been agreed with Inverclyde Council (01-07-2013).

A plan has been produced to show turbine developments within 20km of Land southwest of Auchentiber Bridge (Figure 6.22).

[56]SNH, Assessing the Cumulative Impact of Onshore Wind Energy Developments, http://www.snh.gov.uk/docs/A675503.pdf

TABLE 6.9: AREA TURBINES FALLING WITHIN 20 KM STUDY AREA OF LAND SOUTHWEST OF AUCHENTIBER BRIDGE

Planning Reference #	Status	Development Location	# of Turbines	Hub Ht. (m)	Blade Tip (m)	Dist. (km) Direction
Turbines Above 15m to Blade Tip Within 20km Study Area						
Inverclyde Council						
12/0191/IC	Approved	High Mathernock Farm	1	45	67	0.85; NE
13/0036/IC	Appeal	Priestside Farm	2	45	67	1.2; NE
IC07292	Approved	Kelburn Business Park	1		25	4; NE
11/0125/IC	Approved	Dowries Farm	1	20.6	27	4.6; WSW
11/0209/IC	Approved	Murdieston Farm	2	15.6	22	5.4; NW
12/0099/IC	Approved	Lukeston Farm	1	32.5	47	5.5; SSE
11/0290/IC	Approved	Cornalees Farm	1	20.6	27.1	6.5; W
	Approved	Inverclyde Academy	1		45	8; WNW
12/0111/IC	Approved	Leitchland Farm	1	30.1	41	10.2; WNW
12/0274/IC	Approved	Finnock Bog	2	30.1	42	11.4; WSW
11/0235/IC	Approved	Kelly Mains Farm	1	24.8	34	11.6; WSW
11/0331/IC	Approved	Ardgowan Estate	3	20.6	27	11.6; WNW
Renfrewshire Council						
06/0169/PP	Approved	Mid Glen House	1	12.2	15	7; ESE
12/0808/NA	Pending	West of Ladymuir	1	36	46	7.6; SE
CL/11/00534	Approved	North Bank	1		46	8.9; SSW
09/0735/PP	Approved	Lawmarnock Farm	1	12.2	15	10.2; SE
12/0322/PP	Pending	East Mitchelton Farm	1	18	28.7	11.4; SW
Argyle & Bute Council						
12/00251/PP	Pending	Wallaceton Farm	1	32.2	46	8.1; NW
11/02173/PP	Pending	Walton Farm	1	32.4	47	8.3; NW
12/00614/PP	Pending	Asker Farm	2	24.6	34.2	9.6; NW
North Ayrshire Council						
11/00490/PP	Approved	Hoodsyard Farm	2	15	19.3	17.7; SSE
12/00118/PP	Approved	Broadstonehall Farm	1	18	27	19; SSE
12/00640/PP	Approved	North Biggart Farm	1	30	41.7	20; SE
East Renfrewshire Council						
2012/0573/TP	Approved	Riglaw Rosebank Road	1	12.3	15	17.9; SE
2011/0621/TP	Approved	Crusemill View	1	15	18.3	18.2; SE

2012/0719/TP	Pending	South West Plymuir	1	60	87	18.3; SE
2011/0580/TP	Approved	Plymuir	1	15.4	21	18.7; SE
2012/0220/TP	Approved	South Plymuir Farm	1	20	27	18.9; SE
2012/0496/TP	Approved	Middleton Farm	1	33.4	54	19; SE
2012/0696/TP	Pending	Thorterburn Farm	1	32.5	47	19.3; SE
	Approved	Capellie Farm	3			19.6; SE
Wind Farm Developments Within 20 km Study Area						
West Dunbartonshire Council						
PAN/10/004	Pending	Merkins Windfarm	10	79	120	13.8; NE
North Ayrshire Council						
04/00786/PP	Approved	Kelburn Estate	19	60	102	17.2; SSW
	Approved	Millour Hill	6	75	125	18.9; SSW
	Approved	Wardlaw Wood Windfarm	6	80	125	19.4; SSW

The nearest approved single turbine is approximately 0.85km northeast at High Mathernock Farm [12/0191/IC] at 67m to blade tip, with the nearest pending application being Priestside Farm [13/0036/IC] at 67m to blade tip, approximately 1.2km northeast.

viii. Cumulative Effects on Visual Amenity

Effects of cumulative visual impact:

"*Can be caused by combined visibility, which 'occurs where the observer is able to see two or more developments from one viewpoint' and or sequential effects which 'occur when the observer has to move to another viewpoint to see different developments'*"[57].

Combined Visibility

Combined visibility occurs where the observer/receptor is able to see two or more developments from one viewpoint. Assessments should consider the combined effect of all wind technology which is (or would be) visible from each relevant, identified viewpoint. Combined visibility may either be:

- In combination: Where several wind energy developments are within the observer's arc of vision at the same time; or

[57] Guidelines for Landscape and Visual Impact Assessment. 3rd Edition (LI-IEMA: 2013), Chapter 7, Assessing Cumulative Landscape and Visual Effects, Para. 7.3

- In succession: Where the observer has to turn to see the various wind energy developments.

Sequential Effects

Sequential effects occur when the observer/receptor has to move to another viewpoint to see different developments. Sequential effects should be assessed for travel along regularly-used routes like major roads, railway lines, ferry routes, popular paths, etc. Sequential effects may be:

- Frequently sequential: Where the features appear regularly and with short time lapses in between; to
- Occasionally sequential: Where long time lapses exist between appearances depending on speed of travel and distance between the viewpoints.

The significance of the proposed development, combined with similar wind technology developments, in terms of nature of effects can be defined as none; minor; moderate; and major.

Explanations for ratings of effects are listed in Table 6.9.

TABLE 6.9: RATINGS OF CUMULATIVE EFFECT*

None	The introduction of the proposal would contribute to very little wind development seen within the landscape; where negligible to no combined, succession or sequential effects on visual amenity arise given the type and scale of landscape along with limited distribution of wind technology.
Minor	The proposed development would be seen in a low number of static views from limited receptors, viewed in combination with few identified and highlighted wind developments (combined views). Proposed development may be seen to limited receptors where rotation allows views to sporadic wind development in few directions (successive views). The introduction of the proposed development would contribute to highly intermittent, broken and short-lived sequential views where: there would be long time lapses between appearances; views are predominantly at an oblique angle to direction of travel (sequential views).
Moderate	The proposed development would be seen in a few static views from a moderate number of receptors, viewed in combination with a low number of identified and highlighted wind development (combined views). Proposed development would partially increase the percentage of rotational view impacted by wind development from a small number of identified receptors (successive views). The introduction of the proposed development would contribute to slightly intermittent views of wind technology developments where: features appear sporadically; there would be medium time lapses between appearances; some limited/screened views at an oblique angle to direction of travel; some limited/screened views with direction of travel (sequential views).
Major	The proposed development would be seen in a high number of static views from multiple receptors, viewed in combination with a large percentage of identified and highlighted wind development (combined views). Proposed development would contribute significantly to the enclosing of multiple receptors/add an overbearing level of domination to receptors in successive (rotational) views. The introduction of the proposed development would contribute to constant, open, and sustained views of wind technology developments where: features appear regularly along a route; there would be short time lapses between appearances; and views are extensively and predominantly with direction of travel (sequential views).

*Parameters to determine Cumulative Visual Effects:

- **Sensitivity** – Sensitivity of visual receptors;
- **Context** – The landscape context (Open landscape with wide panoramic views or an intimate landscape with enclosed views);
- **Activity** – The activity of the receptor (Residents, tourists/visitors, workers etc.) and their number; and
- **Magnitude of Cumulative Change** – The magnitude of change in terms of scale, nature, duration, frequency of combined and sequential views (glimpsed or prolonged views; oblique, filtered or direct views; time separation between sequential views).

ix. Combination Views

Combination views within the study area will be most prevalent within the 0-5km range; with the consented High Mathernock Farm proposal and application at appeal for two turbines at Priestside Farm forming the most concentrated association with the development at Land southwest of Auchentiber Bridge. Broader landscape combination views within the 5-10km radius will be lessened by the varied and undulating topography of the region, in addition to intervening areas of commercial coniferous plantation, deciduous farm and policy woodland, as well as existing electrical infrastructure and other recognized man-made vertical features. The considered siting of the proposal allows it to sit comfortably within the topography of the regional area, avoiding prominent hill summits or ridge-lines, meaning the additional visual intrusion it represents is not significantly adverse or disruptive to the flow of the baseline landscape.

Within a radius of 2-5km from the site of development, combination views will be evident from the south, east and west. In eastern areas, views will be fragmented and disrupted by the built structure of Kilmacolm in addition to stands of coniferous and deciduous woodland and intervening landform features. The ridgeline of undulating landform separating the development site from High Mathernock Farm and Priestside Farm forms a visual barrier that prevents significant combined effects from this area. From the southern, more elevated positions of Clyde Muirshiel Regional Park, the proposals at High Mathernock Farm and Priestside Farm will be witnessed in elevated locations within the landscape, cresting the topography in a linear formation. The proposed development would constitute a congruous feature of this formation, in a position of lower relief, comfortably scaled by current electricity infrastructure and the topography of the horizon. The siting of the proposal in an area of less projected landform affords it a level of screening by the commercial plantations of the River Gryfe Valley (from Auchenfoyle to Mathernock Bridge) diminishing further visual interference. Broader combination views in western areas will be confined to a narrow corridor accompanying Gryfe Reservoirs Number 1 and 2. With limited numbers of visual receptors, the primarily recreational users of Clyde Muirshiel Park will be heavily screened by coniferous plantation with only occasional, partial and segmented views achieved, resulting in a limited number of combination views with the neighboring schemes summiting the land to the northeast.

- Sensitivity of the area to additional development within Combination Views: *Low.*
- The overall magnitude of impact on Combination Views: The development will have *slight* impact on combined views within the landscape.
- Significance of effect on Combination Views: *Minor*: The proposed scheme will have a non-significant effect on receptors.

x. Succession Views

The main opportunity for successional views to be experienced will be at Core Path 37B – Devol Road, as it negotiates the upland landform between the consented High Mathernock Farm proposal and the site of development. Walkers travelling in a southerly direction will experience the High Mathernock Farm turbine in close proximity (70m) to the east, with the Priestside Farm scheme found at a more oblique angle to the direction of travel (600m east). The development proposed will become apparent as receptors turn to the southwest. Properties to the east of Land southwest of Auchentiber Bridge will be subject to successive views of these wind turbine developments. The turbines at High Mathernock Farm and Priestside Farm will be obvious to the northwest, positioned prominently within the landscape; with the proposed turbine forming a westerly introduction to the panorama. In eastern areas, the commercial coniferous plantation present will mitigate views of the development being experienced in succession with the identified neighboring wind energy developments, though these effects will vary.

- Sensitivity of the area to additional development within Succession Views: *Low.*
- The overall magnitude of impact on Succession Views: The development will have *slight* impact on successional views within the landscape.
- Significance of effect on Succession Views: *Moderate/Minor*: The proposed scheme will have an effect on receptors.

xi. Sequential Effects

The main impact to transport routes within the development area occurs within the Landscape Character Type (LCT) of the proposed site, Rugged Upland Farmland; as well as the neighbouring LCT of Rugged Moorland Hills, linking the A8 corridor and Clyde Estuary settlements with the upland regions of the Gryfe River Valley and Kilmacolm to the south. The closest regional transport route to the development site is Auchentiber Road.

Auchentiber Road

Auchentiber Road travels on an east-west alignment, bordering the development site to the north by 140 metres at its nearest point. Road users in this area will experience open and connective views to the varied improved upland pasture and rugged moorland beyond, colonised by rough grassland and heathers. Commercial coniferous plantation is particularly concentrated around the River Gryfe Valley towards the western extent of Auchentiber Road. The development at Land southwest of Auchentiber Road will be evident for the majority of the road's duration (3.2km of the total 3.7km length or 86%) with landforms providing screening for a 700 metre section of road south of Priestside Cottage. As the road borders the scheme

proposed to the north and neighbouring developments of High Mathernock Farm and Priestside Farm to its south, these proposals will represent a level of sequential impact to road users at Auchentiber Road. These schemes are viewed at 600 metres and 800 metres respectively, in raised positions within the landform forming central features of the horizon. Travelling in an easterly direction, road users will first experience the turbine at Land southwest of Auchentiber Bridge with the nearby schemes visible, up to and beyond the development site, to the north east. Conversely, road users travelling in a westerly direction will have a sustained view of the proposed turbine within the foreground view of the direction of travel. Additionally, the turbines at High Mathernock Farm and Priestside Farm will be experienced over the undulating topography to the northwest, at an elevation and at an oblique angle to the direction of travel. As a consequence of proximity, direct and clear views of the development will be experienced in sequence with nearby projects until travel passes the development site.

B788

Travelling from Greenock towards Kilmacolm, in a broadly south-easterly direction, road users experience a range of open and expansive views across upland livestock grazing land. This leads to upland moor, impacted by commercial coniferous plantation (primarily focussed around the Gryfe River Valley) as well as sporadic farm properties with associated areas of farm woodland and shelter belt planting. As highlighted in the ZTV mapping for Land southwest of Auchentiber Bridge, the proposed development would be witnessed from a 3.5km section of the B788, beginning west of Harelaw reservoir travelling south towards Kilmacolm. This represents a theoretical visibility impact proportionate to 33% of the overall road length. As the roadway is oriented to the east of the proposed scheme, the developments with the most significant sequential impact will be High Mathernock Farm (1 turbine consented) and Priestside Farm (2 turbines at appeal). These proposals are within the neighbouring LCT of Rugged Upland Moorland and are viewed at a distance of around 1.4km, predominantly at an oblique angle to the direction of travel, in elevated positions upon the horizon line. This baseline road experience to the east of the transport corridor sees the proposed development form an additional vertical feature that would be read within the same field of vision. The setting down of this proposal from the crest of the undulating topography mitigates the degree of skyline profile it possesses and allows the road corridor to benefit from exclusion zones provided by mixed woodland, reducing visual prominence. Due to proximity, the central section of the B788 that crosses the Gryfe River Valley between Gryfe Lea and Auchenfoyle would experience open views, though at an angle to the direction of travel, before travel passes the development site.

A761

Travelling south from Port Glasgow to Paisley via Kilmacolm, Bridge of Weir and Linwood, road users experience a mix of open and expansive views as well as more sheltered and enclosed lengths of road. Land-use represents a mix of small settlements, improved livestock pasture, commercial plantation woodland and deciduous shelter belt planting with associated farm buildings, in addition to upland moorland in more distant and elevated regions. The ZTV mapping (Figure 6.24) for this proposal indicates a concentration of visibility for an initial 1km section of the A761 as it departs Port Glasgow. Further highlighted is a 4.7km span of the

roadway starting north and culminating south of the town of Kilmacolm. This represents a theoretical visibility impact proportionate to 25% of the overall road length. However, a 2km distance of this overall portion of visibility is found within the built structure of Kilmacolm itself, therefore excluding any views of development. Orientated to the west and southwest of the proposed scheme, sequential impact will be derived from High Mathernock Farm (1 turbine consented) and Priestside Farm (2 turbines at appeal). These developments are viewed at a distance of approximately 2km and positioned at an angle to the main foreground view associated with the direction of travel, in areas of raised relief that are prominent upon the skyline of the Devol Road Uplands. The proposed development would constitute an additional feature to these vistas, but would be scaled by existing landscape components and electrical infrastructure elements. This forms a compatible addition that is not dominant when experienced from this roadway corridor. By avoiding significant positions of landform profile with suitable siting, the proposal can be screened by coniferous plantation, deciduous farm woodland and topographic features; reducing its skyline profile, increasing back-clothing and reducing overall visual dominance.

- Sensitivity of the area to additional development within Sequential Views: *Low.*
- The overall magnitude of impact on Sequential Views: The development will have *slight/moderate* impact on sequential views through the landscape.
- Significance of effect on Sequential Experiences: *Moderate/Minor*: The proposed scheme will have an additional effect on receptors.

xii. Summary of Findings (Overall Effect) of Cumulative Impacts

The potential for cluttering within the landscape from the proposed development with other wind energy projects within the *Rugged Upland Farmland* Landscape and adjacent neighbouring landscape types is mediated by maintaining a separation distance between this development and other wind installations.

Changes in landform that combine with a variance in the density and type of vegetative cover present in the landscape also assist in reducing the view corridors in which this installation will be viewed in-conjunction with other area turbines.

Overall, the proposed development at Land southwest of Auchentiber Bridge will have a *moderate/minor* localised cumulative effect on visual amenity and receptors/users of the Rugged Upland Farmland Landscape Character Type. Within this and adjacent landscape types, the large tracts of commercial forestry and the mature deciduous trees that define this part of the Inverclyde Council countryside help to reduce the visibility of the development across the wider countryside.

- The overall magnitude of Cumulative Impact: The development will have *slight* impact with other wind technology development within the landscape.
- Significance of Cumulative Effect: *Moderate/Minor*: The proposed scheme will have a minor significance of effect on receptors when viewed with other wind technology development within the landscape.

Perceived Cumulative Effects

SNH guidance, "Assessing the Cumulative Impact of Onshore Wind Energy Development (2012)"[58] Paragraph 57 states:

53. Perceived cumulative effects may arise;

- Where two or more developments are present but one or more is never seen by the observer, for example, because they are screened, or the observer is unable or unwilling to gain a viewpoint from where they would be seen. The observer is aware that other developments are present because, for example, they may have learnt about them or seen signs to them. ***This effect may be significant, but can also be mistaken, where the observer's information or interpretation of it is wrong****; or*

- ***Where people have formed an opinion about wind farms generally without having seen one, for example through someone else's experience. They may use this perceived effect to express a negative opinion about a development proposal near where they live****.*

54. Few detailed perception studies have been undertaken to date and ***although there is a generally good understanding among planners and Local Authority councillors of perceived effects, it is unusual for them to be considered in the context of an individual decision****. This issue is therefore most appropriately addressed within the scope of strategic environmental assessment or spatial planning.*

Setting Precedent

There is often a public belief that when regulatory authorities approve suitable wind energy development on a projects merits, this will set a precedent in an area for possible unsuitable development.

While in Scottish legislation "precedent" as a planning determination is not addressed, in other renewable energy legislation within the UK, precedent is not allowed as an argument or material planning consideration. In England, "Planning for Renewable Energy (A Companion Guide to PPS22)[59]" states:

39. The planning system exists to regulate the development and use of land in the public interest. The material question is whether the proposal would have a detrimental effect on the locality generally, and on amenities that ought, in the public interest, to be protected. ***Each planning application should be considered on its own merits, and the argument that granting permission might lead to another application is not sufficient grounds for refusal****.*

[58]Office Of the Deputy Prime Minister, PPS22, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/7779/147447.pdf

[59]Office Of the Deputy Prime Minister, PPS22, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/7779/147447.pdf

6.8 Landscape and Visual Impact Assessment Summary

The scale of impact of the proposed development at Land southwest of Auchentiber Bridge has been thoroughly assessed to conclude that the following effects will result from the application:

- The developments setting within the landscape will have a *moderate/minor* effect on the landscape and landscape amenity, an overall effect that is not significant and acceptable to the local and wider landscape; not creating an irreparable and detrimental medium to long-term change to character and landscape fabric.
- The developments setting within the landscape will have a *moderate/minor* effect on the visual amenity to sensitive receptors, an overall effect that is not significant and acceptable to area receptors and sites of identified importance; not creating an irreparable and detrimental medium to long-term change to views of recognised users of the landscape.

The introduction of a wind technology development into this landscape will, of course, have a degree of impact varying from differing view corridors with resultant effect. The inclusion of this development within the *Rugged Upland Farmland LCT* reflects the changes in contemporary land use within this landscape, moving away from commercial forestry operations to supplement agricultural enterprise towards the renewable energy sector.

The reduction of negative visual impacts, to the greatest extent possible, is achieved through planning measures including; the selection and positioning of the development utilising existing landscape elements to screen and reduce the visual prominence within the landscape, siting the proposed development away from view corridors associated with settlements, and selection of structure of a typology that can be accommodated within and reflects the scale of the LCT.

The development site will maintain existing land-use practices preserving the landscape elements that characterise this landscape and adjoining landscapes while the installation, operation and decommissioning of the development will utilise the existing transport infrastructure minimising any long term detrimental impacts on the landscape.

The determination of *moderate/minor* effect (and under) on landscape, landscape amenity and visual amenity is none-significant as specified in The Environmental Impact Assessment (Scotland) Regulations, 1999 (Circular 8, 2007)[60].

[60]The Environmental Impact Assessment (Scotland) Regulations, 1999 – Circular 8 (2007) http://www.scotland.gov.uk/Resource/Doc/205337/0054660.pdf

6.9 Council Development Policy

The proposed development site lies within the greenbelt as designated by Inverclyde Council in the Inverclyde Local Plan, 2005: Proposals Maps.

- **Local Plan Policy UT6 – Renewable Energy Infrastructure**

In assessing proposals for renewable energy infrastructure, Inverclyde Council, as Planning Authority, will have regard to the impact on:

(b) the landscape, particularly when viewed from major transport corridors;
(c) residential amenity;
(d) tourism and leisure resources, particularly if within the Clyde Muirshiel Regional Park.

Local Plan Policy UT6 Analysis:

The proposed turbine development at Land southwest of Auchentiber Bridge will assist in reaching the ambitious targets set locally and nationally for reducing our dependency upon fossil fuels. The impact of the development when assessed visually and cumulatively within the region does not adversely affect the broader landscape. The typology of turbine selected is not out of context with the scale of landform and existing infrastructural elements of the Rugged Upland Farmland landscape, as discussed within this chapter. Existing major transport routes will experience a negligible detrimental impact as a result of the proposed development. The peripheral areas of the settlements of Kilmacolm and Port Glasgow will experience very limited, intermittent and partial views of the scheme, precluding any impact to their residential amenity. The site is out with the boundary of Clyde Muirshiel Regional Park with the tourism and leisure resources of this designation, as well as the broader landscape, experiencing a minimal magnitude of change as a result of this development.

- **Local Plan Policy UT6B – Small Scale Wind Turbine Development**

In assessing proposals for small scale wind turbine developments, Inverclyde Council, as Planning Authority, will be supportive where the proposed development satisfies the criteria of Local Plan Policies UT6 and UT6A, where relevant, and will have regard to the impact on:

(d) neighbouring/adjoining properties and residential amenity generally;
(e) road safety;
(f) natural and built heritage resources in proximity to the site;
(g) proximity to pylons and overhead power lines, and other service infrastructure; and
(h) the landscape, especially when viewed from public vantage points, including local roads, neighbouring settlements, and when set against the skyline

Local Plan Policy UT6B Analysis:

As previously stated, the residential amenity of nearby areas of settlement will experience very limited impact as a result of the proposed development. The visual impact to the few neighbouring residential dwellings has been analysed, with the orientation of these properties relative to the site of development excluding them from any significant visual intrusion. It is not anticipated that the introduction of a wind turbine at Land southwest of Auchentiber Bridge will represent any potential road safety issues. The significance of effect experienced by sites of natural and built heritage within the area of study will be negligible with only slight changes to the current visual baseline of these receptors. The proximity of the proposed turbine to existing electrical infrastructure far exceeds that outlined in the Energy Networks Association Engineering Recommendation L44: Separation between Wind Turbines and Overhead Lines – Principles of Good Practice. The undulant topography of the Rugged Upland Farmland; in conjunction with the suitable siting of the turbine at Land southwest of Auchentiber Bridge; is able to accommodate a development of this scale and typology, which is not incongruous with the scale of the broader landscape or the existing electrical infrastructure that characterises the region.

- **Local Plan Policy DS8 – Green Belt**

There is a presumption against development in the designated Green Belt, as identified on the Proposals Map. Proposals will only be considered favourably in exceptional or mitigating circumstances and where the criteria for development in Policy DS10 for the 'Countryside' can be satisfied.

Local Plan Policy DS10 – Countryside

Development within the countryside (including the Green Belt) will be permitted only where it can be supported with reference to the following criteria:

(a) it is required for the purposes of agriculture and forestry;
(c) there is a specific locational requirement for the use and it cannot be accommodated on an alternative site;
(f) it does not adversely impact on the landscape character;
(g) it does not adversely impact on the natural heritage resource;
(h) it does not adversely affect the visual amenity of the area and is capable of satisfactory mitigation;
(j) it complies with other relevant Local Plan policies.

Local Plan Policy DS8/DS10 Analysis:

The proposal for the development of a wind energy development at Land southwest of Auchentiber Bridge is required as a means of diversification to an agricultural business. This specific site has been selected as it is the only land available for development with no alternative land ownership area. As detailed within this chapter 6, the characteristics and scale of the landscape have been deemed appropriate for this scale of development without detrimental effects to its baseline character. The visual impact upon sites of natural and built heritage within the area of study will be minimal with negligible alteration to their experience of the broader landscape. The outer edges of areas of settlement will be subject to only occasional, distant glimpses of the scheme due to screening from development by topography and mixed tree plantation, excluding them from significant adverse effects to residential amenity, as outlined in mitigation for other Local Plan policies.

- **Local Plan Policy HR1 – Designated Environmental Resources and Built Heritage**

Development that would adversely affect, directly or indirectly, the natural or built heritage resources listed in Schedule 9.1 and where indicated, on the Proposals Map, will not normally be permitted.

Having regard to the designation of the environmental resource and built heritage, exceptions will only be made where:

(b) Visual amenity and townscape will not be compromised.

Local Plan Policy HR1 Analysis:

The introduction of an additional vertical man-made structure at Land southwest of Auchentiber Bridge will have a limited negative impact upon the visual amenity of the region and its townscapes. The peripheral areas of settlement that may otherwise be subject to views of development are adequately screened from the proposal at Land southwest of Auchentiber Bridge by changes in landform and mixed tree planting. The scale and characteristic of the broader landscape has been deemed able to accommodate this suitably sited scale of development. This region has been subject to continual land use change. Historic mineral working practices have been replaced by significant coniferous plantation woodland and electricity infrastructure of a comparable scale to the development proposed.

7 HISTORIC ENVIRONMENT

7.1 Background

The Historic Environment is defined as "*All aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, and landscaped and planted or managed flora*"[61]. The importance of protecting this historic environment is widely recognised; however this protection is not about preventing change.

Modern wind energy, which has been developed partly to address climate change issues, can both threaten the historical landscape if sited inappropriately, and work towards protecting it in the long-term. The addition of modern developments, including wind turbines, will always have an effect on sites of archaeological significance, either directly through physical impacts (including shadow flicker and noise) or indirectly, by affecting the setting of the monument. As such, the impacts of renewable energy developments must be assessed thoroughly and, where possible, limited.

As the Historic environment is an important part of society and landscape across the UK, guidance and policy have been integrated throughout Britain to allow a comprehensive, thorough and consistent analysis regardless of the location of the project. English Heritage has acknowledged the need for renewable technologies and their importance for the preservation of the Historic Environment[62]. Threats from rising sea levels; increased severity and frequency of flooding; changing vegetation patterns driven by higher average temperatures; increased rainfall and weather intensity; and changes in cropping regimes from altered hydrology all present threats to archaeological sites. Wind energy therefore has a positive role to play in regards to our cultural heritage and archaeology.

7.2 Historic Setting

The greatest impact from turbines on the historic environment is the visual effect they have on their surroundings. The introduction of a modern, moving vertical element into a landscape will affect the historic setting of any monument. Historic Setting is a complicated issue and there is no singular definition of the term. Historic Scotland's guidance on setting explains;

"Setting often extends beyond the property boundary, or 'curtilage', of an individual historic asset into a broader landscape context. Less tangible elements can also be important in

[61] National Planning Policy Framework 2012, Page 52

[62] English Heritage, Wind Energy and the Historic Environment: http://www.english-heritage.org.uk/professional/advice/advice-by-topic/climate-change/renewable-energy/wind-energy/

understanding the setting. These may include function, sensory perceptions or the historical, artistic, literary, and scenic associations of places or landscapes"[63].

Historic Scotland also highlights the importance of viewing monuments as interactive parts of a wider historic landscape. The three key points in the importance of the setting of monuments are:

- *Setting should be thought of as the way in which the surroundings of a historic asset or place contribute to how it is experienced, understood and appreciated;*
- *Monuments, buildings, gardens and settlements were not constructed in isolation. They were often deliberately positioned with reference to the surrounding topography, resources, landscape and other monuments or buildings. These relationships will often have changed through the life of a historic asset or place; and*
- *Setting often extends beyond the immediate property boundary of a historic structure into the broader landscape*[64].

7.3 Methodology

A thorough assessment of the cultural heritage and archaeology local to the development site at Auchentiber Bridge has been conducted to determine the potential impacts of the proposed turbine development. The aim of this investigation is to identify the direct and indirect impacts of the turbine, cable trench, access road and other infrastructural requirements within a targeted study area around the development.

This assessment was conducted via a desk-based assessment of Historic Records using a variety of resources. A map of the local historic environment to the development site is attached to the Appendix, Figure 7.1. A ZTV overlay has been included to highlight whether there is the potential for views from the monuments or historic features to include the wind turbine proposed at land southwest of Auchentiber Bridge.

Policy and Guidance

National planning policy and guidance aims to protect, conserve and enhance the historical environment. A number of policy and guidance documents, some geared towards proposed renewable energy developments in particular, indicate how the planning system will achieve this. These documents include:

- Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997;
- Ancient Monuments and Archaeological Areas Act 1979;
- Town and Country Planning (Scotland) Act 1997
- Planning etc. (Scotland) Act 2006;
- Scottish Planning Policy: Historic Environment, 2010;

[63] Historic Scotland, Managing Change in the Historic Environment, Setting, October 2010
[64] Historic Scotland, Managing Change in the Historic Environment, Setting, October 2010

- Historic Scotland, Scottish Environmental Policy (SHEP) 2008;
- Historic Scotland, Managing Change in the Historic Environment: Micro-Renewables, 2010;
- Historic Scotland, Managing Change in the Historic Environment: Setting, 2010;
- English Heritage, Wind Energy and the Historic Environment 2012.

Where the character of the historic building or place can be maintained, Historic Scotland support the development of renewable energy. The publication *'Managing Change in the Historic Environment: Micro-Renewables'*[65] sets out principles to be taken into consideration when planning a wind turbine development:

- Establish significance

Determine what is important about the historic place and its setting. For example, some historical buildings were originally designed to be visible from all directions, whereas others may have parts of lesser interest or less visible elevations.

Analysing the setting of a historic asset takes into account a number of factors; including how important its surroundings are to its character and how modern development is part of the experience of the historic asset today. The number of visitors to a site does not reflect the significance of its setting, although will be taken into consideration by a local planning authority[66].

- Identify potential impacts

These impacts can be physical and/or visual. Physical impacts can refer to deliberate alteration or accidental damage to historic buildings or their settings; or it can relate to physical impacts on the ground which can affect archaeology.

Visual impacts are also a material consideration in the planning process: a turbine may be located in principal views of a historic building, or it may interrupt the spatial relationships with other buildings or natural features. Noise and vibrations are taken into account in the following chapters, yet are important factors in regards to the historical environment.

- Siting and design

Sensitive planning so that not only wind turbines, but also the associated equipment and cabling, are sited to avoid principal elevations. Impacts will be minimised through, for example, specifying the maximum necessary diameter and length of cabling.

- Cumulative effects

There is the potential that additional wind turbine developments in the area will create a cumulative impact on the historic environment, therefore this must be taken into account.

[65] Historic Scotland, Managing Change in the Historic Environment: Micro-Renewables, 2010
[66] Historic Scotland, Managing Change in the Historic Environment: Setting, 2010

The tables below have been designed to assist in measuring how sensitive a historical asset is and how extensive the magnitude of the impact is from the proposed development. These are not all-encompassing, as they do not take into account all of the principles identified above, such as cumulative impact, which must still be assessed separately. Neither can they be used to provide an objective result, as professional judgement is still required[67]; however they remain a useful tool in order to easily take into account a number of important factors.

TABLE 7.1: SENSITIVITY: BUILT AND CULTURAL HERITAGE ON THE SITE[68]

Sensitivity	Definition
High	Category A and B listed building Scheduled Ancient Monument Non-statutory list of sites likely to be of national importance Designed Gardens and Landscapes
Medium	Category C(S) listed building Archaeological sites on the Sites and Monuments record (of regional and local importance) Conservation Areas
Low	Archaeological sites of lesser importance Non-Inventory Gardens and Designed Landscapes

[67] Historic Scotland (2007) *Environmental Impact Assessment (Scoping): Scoping of wind farm proposal; assessment of impact on the setting of the historic environment resource; some general considerations.*

[68] Use of Wind Energy in Aberdeenshire Guidance for Assessing Wind Energy Developments August 2005

TABLE 7.2: MAGNITUDE OF BUILT AND CULTURAL HERITAGE EFFECTS

Magnitude of Impact	Definition
High	Any number of wind turbines and/or ancillary development that would result in: • The removal or partial removal of key features, areas or evidence important to the historic character and integrity of the site, which could result in the substantial loss of physical integrity; and/or • A substantial obstruction of existing view by the addition of uncharacteristic elements dominating the view, significantly altering the quality of the setting or the visual amenity of the site both to and from. Where the mechanical or aerodynamic noise from any number of wind turbines (or from other neighbouring wind energy developments) that are likely to detract from site amenity of a popular built or cultural heritage site managed as a visitor attraction adjacent to a wind energy development.
Medium	Any number of wind turbines and/or ancillary development that would result in: • The removal of one or more key features, parts of the designated site, or evidence at the secondary or peripheral level, but are not features fundamental to its historic character and integrity; and/or • A partial obstruction of existing view by the addition of uncharacteristic elements which, although not affecting the key visual and physical relationships, could be an important feature in the views, and significantly alter the quality of the setting or visual amenity of the site both to and from. Where the noise intrusion (mechanical or aerodynamic) from any number of wind turbines (or from other neighbouring wind energy developments) may detract from the amenity of a built or cultural heritage site adjacent to a wind energy development.
Low	Any number of wind turbines or ancillary developments that may result in: • A partial removal/minor loss, and/or alteration to one or more peripheral and/or secondary elements/features, but not significantly affecting the historic integrity of the site or affect the key features of the site; and/or • An introduction of elements that could be intrusive in views, and could alter to a small degree the quality of the setting or visual amenity of the site both to and from Where the noise intrusion (mechanical or aerodynamic) from any number of wind turbines (or from other neighbouring wind energy developments) is unlikely to detract from the amenity of a built or cultural heritage site adjacent to a wind energy development.

Negligible	Any number of wind turbines or ancillary developments that may result in: • A relatively small removal, and/or alteration to small, peripheral and/or unimportant elements/features, but not affect the historic integrity of the site or the quality of the surviving evidence; and/or • An introduction of elements that could be visible but not intrusive in views, and the overall quality of the setting or visual amenity of the site would not be affected both to and from. Where the noise intrusion (mechanical or aerodynamic) from any number of wind turbines (or from other neighbouring wind energy developments) would not have any noticeable effect on the amenity of a built or cultural heritage site adjacent to a wind energy development.

Taking into account the principles explored above, an assessment of the potential impacts of the proposed development on the areas cultural heritage has been conducted. The impacts have been analysed through a study of the Historic Records for the area. Historic Scotland Records have been consulted to analyse the following:

World Heritage Sites (WHS)	The 1972 UNESCO World Heritage Convention was ratified by the UK in 1984. The Convention provides for the identification, protection, conservation and presentation of cultural and natural sites of "outstanding universal value." The UK currently has 28 WHS.
Scheduled Ancient Monuments (SAMs)	Monuments of national importance given protection under the Ancient Monuments and Archaeological Areas Act 1979 by Scottish Ministers.
Listed Buildings	Listed buildings are structures of special architectural or historic interest protected under The Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997.
National Monuments Record of Scotland (NMRS)	These contain the national collection of material relating to Scottish archaeological and architectural heritage.
Scottish Sites and Monument Records (SSMR)	The SSMR have been compiled by, or produced on behalf of, Scottish Local Authorities.
Other Designated sites	Industrial Heritage Sites, Conservation Areas and Gardens and Designed Landscapes.
Development Plans	These will be consulted to analyse their policies towards cultural heritage.

7.4 Designated Historical and Archaeological Sites within 5km of the development site at land southwest of Auchentiber Bridge

a. World Heritage Sites

From maps generated, it is possible to conclude that there are no World Heritage Sites within a 5km radius of the development site. As such, the proposed development will not impact negatively on such designations.

b. Scheduled Ancient Monuments

TABLE 7.3: SCHEDULED ANCIENT MONUMENTS (SAMS) WITHIN 5KM OF THE PROPOSED TURBINE

Index No.	Name	Distance	Sensitivity	Magnitude
12883	High Mathernock, AA battery 350m WSW and camp 360 SW of	0.73km	High	Medium - Low
Description: The monument comprises the remains of the High Mathernock heavy anti-aircraft battery, dating to the Second World War. The site consists of a command post, four upstanding gun emplacements and the remains of the nearby accommodation camp. The battery itself, comprising the command post and gun emplacements, now lies in a field of grass, while the accommodation camp lies some 175m SE of the battery in a field of rough grazing. The command post would initially have been a semi-subterranean structure with surrounding earthen banks providing additional protection from blast damage, but these banks have since been removed. The accommodation camp is located in another field, some 175m SE of the battery[69].				
12893	Pennytersal Farm, motte 235m SW of*	2km	High	Negligible
Description: The monument comprises the remains of a motte, a steep-sided artificial mound upon which the principal tower of an Anglo-Norman castle would have stood and which dates to the medieval period. The monument is visible as a well-defined earthwork located on the SW edge of a terrace at around 100m above sea level. A now canalised tributary of the Gryfe Water is located 70m to the west. The visible element of the monument is a turf-covered, flat-topped and roughly circular mound of earth and stone[70].				

[69] High Mathernock, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2300:35:3377763891185494::NO::P35_SELECTED_MONUMENT:12883

[70] Pennytersal Farm, motte: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2300:35:3377763891185494::NO::P35_SELECTED_MONUMENT:12893

4379	Craigmarloch Wood, fort*	2.8km	High	Negligible
Description: The site consists of a palisaded enclosure (not visible on the surface), within which a dense artefact rich occupation layer was found. This was superseded by a timber laced fort. The area enclosed by the palisade and rampart (and by two annexes, to the SW and NE, of unknown but probably Iron Age date) lies on top of a craggy hill at the 500' contour. Visible on the surface are the main fort and enclosure and the annexes[71].				
12886	High Castlehill, enclosure 55m WSW of*	3.5km	High	Negligible
Description: The monument comprises the remains of an enclosure with evidence of at least one internal structure. The monument is probably a homestead, a small defended settlement, occupied in later prehistory, sometime between around 800 BC and AD 400. The monument is visible as a low grass-grown storny bank indicating the position on the summit of High Castlehill, at approximately 140m above sea level, with good views over the surrounding landscape[72].				
90230	Newark Castle*	3.1km	High	Negligible
Description: The monument comprises the remains of a C15th Castle with C16th modifications, surviving as four upstanding masonry structures, including a gatehouse, hall and tower, now linked by wings and constructed around a central courtyard and also the remains of the NW corner tower of the barmkin wall, since converted into a doocot. There are also associated buried archaeological remains within the area defined by the barmkin. The oldest elements of the castle are the tower and the barmkin, a defensive enclosing wall with corner towers[73].				
12800	Lurg Moor, hut circle 1180m SW of Knocknairshill*	2.6km	High	Negligible
Description: The monument comprises the remains of a hut circle, possibly of late Bronze Age or Iron Age date (late second or first millennium BC). It is visible as a roughly circular structure of turf and stones and is situated about 1170m northeast of Knocknairshill. Situated in moorland, the hut circle is waterlogged and overgrown with grass and patches of heather[74].				
1653	Lurg Moor, Roman fortlet and Roman road*	2.9km	High	Negligible

[71] Craigmarloch Wood, fort, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2300:35:3377763891185494::NO::P35_SELECTED_MONUMENT:4379

[72] High Castlehill, enclosure 55m WSW of, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2300:35:3377763891185494::NO::P35_SELECTED_MONUMENT:12886

[73] Newark Castle, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2300:35:3377763891185494::NO::P35_SELECTED_MONUMENT:90230

[74] Lurg Moor Hut Circle, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2300:35:3377763891185494::NO::P35_SELECTED_MONUMENT:12800

Description: The monument comprises the remains of a Roman fortlet and Roman road, dating probably to the mid C2nd AD. It is situated on high ground above the town of Greenock on the northern edge of Lurg Moor. The fortlet is visible as the earthwork remains of the bank and ditch and contains internal mounds indicating buried features. The combined elements of the monument and their particularly good survival make it an excellent example of Roman military infrastructure during the Antonine era[75].				
12828	Whitelees Cottage, bombing decoy control bunker 230m NW of*	4.4km	High	Negligible
Description: The monument comprises a brick and concrete-built roofed structure, the remains of a Second World War Naval, ST-type, decoy control shelter. The monument is located at 275m above sea level on high moorland around 2.8km SW of the Clyde Estuary. The shelter is a square building with a porch/covered entrance passage on the W corner. The shelter was constructed during early 1941 as part of a decoy site. A military construction designed to replicate burning buildings and infrastructure and draw away bombs from strategically important industrial and residential areas, it was used during night hours[76].				
12854	Muiredge, cairn 1050m W of*	3.5km	High	Negligible
Description: The monument comprises the remains of a cairn built probably between 3000 and 1000 BC, in the late Neolithic or Bronze Age. It is visible as a prominent stony mound and lies within a forestry plantation at about 210m above sea level. The ground slopes down gently to the north and east into the valley of the Gryfe Water[77].				
12838	Dowries, cairn 495m SW of	4.8km	High	Negligible
Description: The monument comprises the remains of a cairn, built probably between 3000 and 1000 BC in the late Neolithic period or Bronze Age. It is visible as a prominent turf-covered mound and lies in moorland at about 280m above sea level. The cairn lies on a level shelf on the N slopes of Creuch Hill and has extensive views to the north[78].				
12868	Hillside, roundhouses 690m WSW of and 780m and 830m SW of*	2.9km	High	Negligible

[75] Lurg Moor, Roman Fortlet and Roman Road, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2300:35:3377763891185494::NO::P35_SELECTED_MONUMENT:1653

[76] Whitelees Cottage, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2300:35:3377763891185494::NO::P35_SELECTED_MONUMENT:12828

[77] Muiredge, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2300:35:3377763891185494::NO::P35_SELECTED_MONUMENT:12854

[78] Dowries, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2300:35:3377763891185494::NO::P35_SELECTED_MONUMENT:12838

Description: The monument comprises the remains of three prehistoric roundhouses, dating to sometime between 2500 BC and AD 400. The houses are visible as low grass-grown banks and arcs of stones and are placed at intervals of around 100m. They lie between 225m and 240m above sea level on the south side of the valley of the Green Water, on a gentle north-facing slope. There are long views down the valley to the east[79].				
12824	Burnbank Water, settlement 1740m S of Hillside*	3.6km	High	Negligible
Description: The monument comprises the remains of four hut circles, probably of late Bronze Age or Iron Age date (late second or first millennium BC). Each of the hut circles is visible as a roughly circular structure of earth and stones. The monument is situated about 730m south of Laverock Stone. The hut circles lie in close proximity to each other, set almost in a row over a distance of around 225m. Situated in an upland moor, the hut circles are overgrown with rough grass, reeds and patches of heather[80].				
5522	Duchal Castle*	3.4km	High	Negligible
Description: The monument consists of the remains of Duchal Castle, an extensive C13th fortified site. The castle is naturally well defended on a piece of ground cut off steeply on the N and S by the confluence of the Green Water and the Blackwater Burn[81].				
*These sites do not fall within the ZTV and are therefore will not be visually impacted by the proposed development due to intervening topography. No artificial elevations need to be taken into account for any of these sites. As the proposal will have no visual impact from these locations, they will not be discussed any further within this report.				

Impacts

Within a 5km radius of the development site at Auchentiber Bridge, thirteen Scheduled Ancient Monuments are located, scattered throughout the landscape. From the ZTV generated, it is possible to suggest that the majority of the SAMs will be unaffected by the development, by virtue of topographical screening (Appendix Figure 7.1). Additional screening will be provided by vegetation within the landscape. Of the thirteen SAMs within the study area, eleven fall outwith the ZTV and will not experience views of the turbine at the development site. The two SAMs which fall within the ZTV are:

1. High Mathernock, AA battery 350m WSW and camp 360 SW of; and
2. Dowries, cairn 495m SW of.

[79] Hillside, roundhouses, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2300:35:3377763891185494::NO::P35_SELECTED_MONUMENT:12868

[80] Burnbank Water, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2300:35:3377763891185494::NO::P35_SELECTED_MONUMENT:12824

[81] Duchal Castle, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2300:35:3377763891185494::NO::P35_SELECTED_MONUMENT:5522

The first SAM within the study area falling within the theoretical zone of visibility is the *AA Battery and Camp* at High Mathernock, which is located approximately 730m from the development site. The second SAM is *Dowries cairn,* which is sited approximately 4.8km west southwest of the turbine site. From the ZTV, it is suggested that these monuments could potentially have views of the turbine at land southwest of Auchentiber Bridge and as such, have been analysed further.

IMAGE 7.1: REMAINS OF THE HIGH MATHERNOCK CAMP SAM[82]

The monument known as High Mathernock, AA battery and camp, comprises the remains of the High Mathernock heavy anti-aircraft battery which dates back to the Second World War. Historic Scotland state that '*as one of the group of HAA batteries installed as part of the aerial defences of the Clyde Gun Defended Area, this site could potentially supply valuable information about the requirements and technologies of Second World War aerial defences as the war progressed*'[83]. When constructed, the site was one of forty-six HAA (heavy anti-aircraft) batteries created to protect the Clyde from aerial assaults during the war. Today, the site is relatively well-preserved, and lies within open farmland, grazed by livestock (Images 7.1 and 7.2). The remains of the battery and camp are situated in different fields, however their proximity to each other allow them to be read as one monument.

The remains of the camp are little more than the buildings foundations, visible as indentations in the grass (Image 7.1). The camp is visible from the road however its historical importance is not clear. Access to the camp is limited, as there is no clear path to the site through the field. Although there are no signs advising visitors of the nature of the site or the buildings, their preservation is important to the historic landscape of Inverclyde.

[82] Photograph taken by VG Energy on 5th March 2013

[83] High Mathernock, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2300:35:2625199626007431::NO::P35_SELECTED_MONUMENT:12883

On the other hand, the battery buildings are well preserved and remain standing (Image 7.2). The buildings were originally surrounded by large banks, which have since been removed, exposing the brick-built structures. Their positioning at the site allows the structures to be viewed from the roadway; however access to the site is limited due to the livestock grazing in the field.

IMAGE 7.2: REMAINS OF THE HIGH MATHERNOCK AA BATTERY SAM[84]

Historic Scotland state that the monument is of national importance as it provides an understanding of the past, '*in particular the defences of the Clyde during the Second World War and their place within the wider defensive network of wartime Britain*'[85]. As such, the buildings physical preservation is important, whilst also ensuring that the historic setting of the monument is maintained.

Neither the camp or battery will be physically impacted by the turbine development at land southwest of Auchentiber Bridge, as the turbine and associated infrastructure will be located approximately 730m northwest of the monument. Visitors to the monument however, may experience views of the turbine at Auchentiber Bridge. The smoothly undulating nature of the surrounding landscape affords visitors to the site expansive views out over the pasture fields which are traversed by large electricity pylons. Although the monument may experience views of the turbine, a large amount of screening will be provided by the trees that bank Gryfe Water. As noted, the monuments historic importance lies with its connection to the industrial warfare of the Second World War. In recent years the monument has undergone a number of alterations. A variety of changes have been made, including the creation of a pen in the centre of the

[84] Photograph taken by VG Energy on 5th March 2013

[85] High Mathernock, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2300:35:3377763891185494::NO::P35_SELECTED_MONUMENT:12883

enclosure, with new doors and fittings being installed by a local clay pigeon shooting club[86]. Alterations such as these has inevitable changed the building itself along with its historic setting. However, by installing a turbine at the proposed development site, the historic setting of the monument will not be adversely affected by the proposal. Although views of the turbine may be possible, the development will not generate unacceptable levels of adverse impact.

The second SAM located within 5km of the development site, falling within the ZTV is that of Dowries, cairn, approximately 4.8km west southwest. The monument lies within the Renfrewshire Heights SSSI, at an elevation of 280m above sea level. Cairns such as this often provided a focus for religious or funerary activity, and were used to cover and mark the human burial grounds in Neolithic or Bronze Age[87]. As stated by Historic Scotland, the cairn is located on the northern slopes of Creuch Hill and is afforded extensive views to the north. Cairns were also located to benefit from inter-visibility, with Dowries cairn positioned to take advantage of views to and from both Garvock and Muiredge cairns. Historic Scotland emphasise the importance of the site by stating, "*The loss of the monument would significantly diminish our future ability to appreciate and understand the placing of such monuments within the landscape and the meaning and importance of death and burial in prehistoric life*"[88]. As such, the preservation of the monument is an important factor to consider during the planning stage of this proposal.

It is possible to suggest that the Cairn will experience views out towards the proposed development at Auchentiber Bridge, as a result of the elevation at which it is located. The monument was designed to benefit from extensive views over the landscape, and still benefits from this today. The landscape has been altered over the years, with agriculture and woodland providing a changing element to the area. The Cairn remains visible as a prominent mound; however the site is not easily accessible or recognisable without prior awareness due to a lack of signage nearby. Although views from the monument have the potential to include the proposed turbine at Auchentiber Bridge, along with the turbines at both High Mathernock and Priestside Farm, the overall impact is not considered to be adverse. Due to the orientation of the Cairn, primary views are directed towards the north, in the direction of Muiredge Cairn; away from the turbine development which is sited to the east northeast. It is not perceived that the proposed development will alter the historic setting of the Cairn, or impact negatively on the sites importance as a historical asset, but virtue of the distance and intervening landuse, vegetation and topography.

Cumulative Impact

When assessing the cumulative impact to High Mathernock AA battery and camp SAM taking into account the proposed turbine at Auchentiber Bridge, along with other turbines within the

[86] High Mathernock, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2300:35:3377763891185494::NO::P35_SELECTED_MONUMENT:12883

[87] Dowries, Cairn, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2300:35:1869517360765185::NO::P35_SELECTED_MONUMENT:12838

[88] Dowries, Cairn, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2300:35:1869517360765185::NO::P35_SELECTED_MONUMENT:12838

local landscape, it is not perceived that the impact will be adverse. Although there may be the possibility of viewing more than one turbine from the monument, the impact is not considered to be of an unacceptable level. Screening is provided by the trees which line Gryfe Water, reducing the overall visibility of the turbines within the landscape. Due to the more prominent location of the consented High Mathernock turbine, and the proximity of the Priestside Farm turbines, these structures will pose a greater impact to this Scheduled Ancient Monument, than the single proposed turbine at land southwest of Auchentiber Bridge.

As noted previously, Dowries Cairn is afforded significant views out over the surrounding landscape, with inter-visibility with other Cairns in the local area. At an elevation of approximately 280m above sea level, individuals visiting the Cairn are granted views down towards the lower valley floor, dominated by agriculture and traversed by rivers such as Gryfe, Burnbank and Green Waters. The proposed development is located to the east northeast of the Cairn, and will be viewed in combination with the consented High Mathernock turbine and the two turbines at Priestside Farm (at appeal during time of writing). Although the turbine will be visible from the Cairn, it is not perceived that the cumulative impact of the development will be adverse. The historic setting of the monument will not be damaged, as the nearest turbine will be located 4.8km from the cairn. The surrounding landscape is continuously changing and evolving, with a number of large man-made elements traversing the scene already, including electrical pylons. As such, although views from the cairn will contain the modern turbines, the impact is not considered to be of an unacceptable level.

c. Listed Buildings

TABLE 7.4: GRADE A LISTED BUILDINGS WITHIN 5KM OF THE PROPOSED TURBINE

Ref.	Name	Category	Sensitivity	Magnitude
12448	St. Columba's (formerly St. James's) Church of Scotland Duchal Road, Kilmacolm	A	High	Low
Description: Gothic Revival ('flamboyant'); stone-built; slated; tower with stair turret; (c.1902); archt. William Leiper. Part ashlar. Ecclesiastical building in use as such[89].				
40078	Broadfield Hospital, Broadstone House, (Mental Home) Old Greenock Road*	A	High	Negligible
Description: Large Scots-Renaissance mansion with details based on Newark Castle: rubble, 2/3-storey with 4-storey tower, cross-stepped gables, notable conservatory: panel with letters 'ADV' and 'PKC' interwoven and 'architect 1870'[90].				
40088	2 Parkhill Avenue, Holy Family Roman Catholic Church and Presbytery*	A	High	Negligible
Description: Gillespie Kidd and Coia, 1946-59. Large Church with presbytery adjoining to N set into a steeply sloping site. Yellowish red facing brick with copper roofs. Church on rectangular plan, with low-pitched roof, 9 bay separated by plain pilasters continued to eaves as timber mullion[91].				
40069	Newark Castle, Castle Street*	A	High	Negligible
Description: 3 sides of courtyard: S.E. part original keep, late C15th, remodelled c.1597-9; S.W. part gatehouse, probably early C16th with vaulted entrance passage; N. part mansion (2-storey and vaulted basement) dated 1597 and 1599 uniting the two detached portions; symmetrical river front, angle turrets. Renaissance details. Scale and platt stair to 1st floor. Fragments of painted ceiling. Circular doocot with stone spired roof[92].				
40067	Bay Street/ Robert Street, Gourock Ropeworks*	A	High	Negligible

[89] St Columa's Church of Scotland Duchal Road, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2200:15:0:::BUILDING,HL:12448,st columba's church of Scotland

[90] Broadfield Hospital, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2200:15:0:::BUILDING,HL:40078,broadfield hospital

[91] 2 Parkhill Avenue, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2200:15:0:::BUILDING,HL:40088,2 parkhill avenue

[92] Newark Castle, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2200:15:0:::BUILDING,HL:40069,newark castle

Description: Built in 1860's as sugar refinery, later a ropeworks. Tall L-plan block on corner site; red brick with yellow contrasting dressing; regular bays, 8 storeys including (mainly blind) circular opening to basement and shallow attic storey, other opening shallow-arched, large windows with 12-pane glazing; moulded eaves; pienided low slated roofs. Interior fireproof construction, cast-iron beams and columns, brick arches[93].				
40071	Fore Street, former Municipal Buildings*	A	High	Negligible
Description: 2-storey ashlar classic with tetrastyle G-doric portico and 150' spire. David Hamilton archt., 1815. The building is today (2004) used as a library, exhibition space and as meeting rooms[94].				
34175	Greenock, James Watt Dock, Titan Cantilever Crane*	A	High	Negligible
Description: 1917 by Sir William Arrol and Co Ltd for the Greenock Harbour Trust. 150 ton grant, steel cantilever crane on the S side of James Watt Dock. Lattice girder tower supporting roller track on which rotates the asymmetrical cantilever truss gib with motor room and counter weight at short end. Constructed during the 1st World War then there was great competition for materials. This crane was a considerable achievement[95].				
34172	Warehouse (Clyde Port Authority) East Hamilton Street, Cartsdyke*	A	High	Negligible
Description: Built c.1885. Long warehouse, with high first storey, built of red brick with arches, pilaster-strips and window-margins in yellow brick. At west end is a 4-storey and loft block 7 bays wide, the bays being separated by pilaster-strips; Central bay has door at 2nd, 3rd, 4th, with hoist over. Built beside the contemporary James Watt Dock which was built by John Waddell Edinburgh to the design of W.R.Kinniple[96].				
34184	Kilmacolm Road, St Laurence's RC Church and Presbytery*	A	High	Negligible
Description: Gillespie Kidd and Coia, 1951-4. Large Scandinavian – inspired church aisled nave, low tower-chancel and shallow presbytery all with parallel steep-pitched roofs at different levels, with				

[93] Bay Street/Robert Street, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2200:15:0:::BUILDING,HL:40067,bay street robert street

[94] Fore Street, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2200:15:0:::BUILDING,HL:40071,fore street

[95] Greenock, James Watt Dock, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2200:15:0:::BUILDING,HL:34175,james watt dock titan

[96] Warehouse (Clyde Port Authority), Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2200:15:0:::BUILDING,HL:34172,warehouse east hamilton street

presbytery at right angles linked by transept. Red brick with sandstone dressings. Slated roofs. Church sits on brick-faced plinth, surrounded by railing, which continue as mixed walls and railings round remaining sides[97].
*These sites do not fall within the ZTV and are therefore will not be visually impacted by the proposed development due to intervening topography. No artificial elevations need to be taken into account for any of these sites. As the proposal will have no visual impact from these locations, they will not be discussed any further within this report.

Impacts

Grade A listed buildings are considered to 5km as they have received the highest designation for their national or international historical importance and require significant protection[98]. Grade B Listed Buildings have been considered to a distance of 2km, as beyond this distance, the impacts of the turbines are believed to be minimal.

From maps generated, it is possible to conclude that there are no Grade B listed buildings within 2km of the development site. Within 5km of the development site at land southwest of Auchentiber Bridge, there are nine Grade A Listed Buildings (See Appendix, Figure 7.1). Eight of these listed buildings do not fall within the ZTV generated, highlighting that the turbine will not be visible from these sites. As can be seen from the map generated (Appendix, Figure 7.1), one building falls within the ZTV and could potentially have views of the development; St. Columba's (formerly St. James's) Church of Scotland Duchal Road, Kilmacolm.

Located approximately 4.5km southeast of the development site, St. Columba's Church is placed within the heart of the town of Kilmacolm. The Church provides a religious hub for those within the community, with sermons being held weekly for the congregation. The building itself has a number of stained glass windows, with a carved stone front and war memorials located within the church. Those who visit the church will be focused on external features of the building, along with the services taking place inside. The main aspect of the church faces southwest-northeast, with the turbine at Auchentiber Bridge located directly northwest; outwith the primary views. As the church is located within the town of Kilmacolm, the building is surrounded by residential properties and other buildings.

Although the ZTV suggests that visitors to the church may have the opportunity to view the structure at Auchentiber Bridge, it is unlikely that views of this nature will be possible. Visual mitigation is provided by the buildings within the town of Kilmacolm, screening the turbine from views. Additionally, the setting of the church will be unaffected by the proposal as a result of the intervening distance and screening provided within the landscape.

Cumulative Impact

The cumulative impact to this Grade A Listed Building is not considered to be adverse. Due to the intervening topography and buildings within the town of Kilmacolm, cumulative views of

[97] Kilmacolm Road, St Lawrence's RC Church and Presbytery, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2200:15:0:::BUILDING,HL:34184,st lawrence church

[98] What is Listing? Historic Scotland: http://www.historic-scotland.gov.uk/index/heritage/historicandlistedbuildings/listing.htm

wind energy developments from the church will not be possible. As such, the introduction of a single wind turbine at land southwest of Auchentiber Bridge, 4.5km away, will not generate adverse cumulative effects to the historic setting or importance of St. Columba's Church on Duchal Road.

d. National Monument Records of Scotland and Scottish Sites and Monument Records

TABLE 7.5: NMRS AND SSMRS WITHIN THE LAND BOUNDARY OF THE PROPOSED DEVELOPMENT

Canmore ID	Name	Type
42429	High Mathernock Farm	Cup Marked Stone
Description: A rough sandstone block, bearing on one face three, and on the opposite face four, cup marks, found on High Mathernock Farm, is now in Paisley Museum. This cup marked stone was turned up during ploughing in 1954[99].		

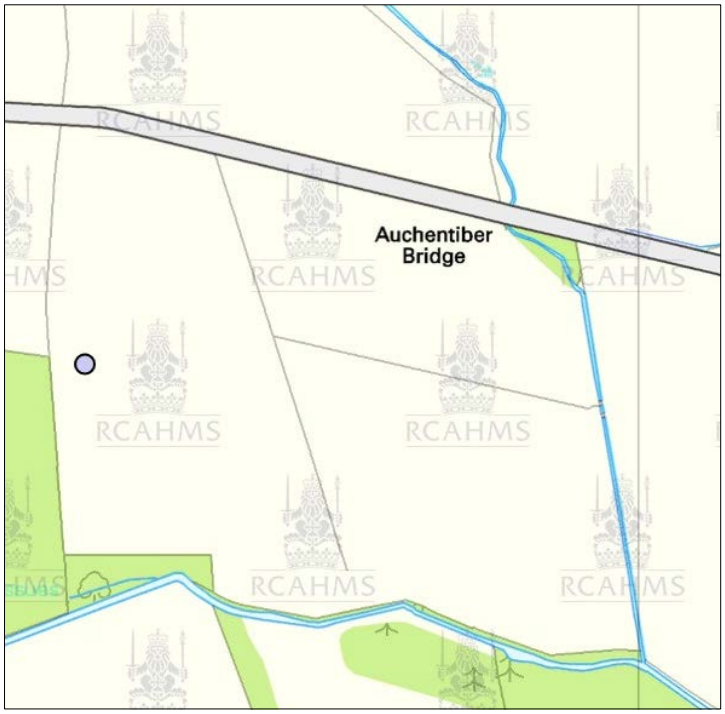


IMAGE 7.3: PASTMAP MAP OF NMRS/SSMRS[100]

[99] Canmore, High Mathernock Farm: http://canmore.rcahms.gov.uk/en/site/42429/details/high+mathernock+farm/

[100] The information provided from this dataset may be incomplete due to the nature of the monument analysis and record upkeep. VG Energy strive to provide a comprehensive and complete analysis of the impact of each proposal utilising the most comprehensive and accessible information possible. The limitations of these datasets are acknowledged and where possible prior contact is made with archaeological bodies to ensure these records are complete. If sites have been excluded from the dataset available VG Energy will provide additional information and analysis if and when requested. It is acknowledged that the statement on the West of Scotland Archaeology Service web site clearly states "The Sites and

Impacts

As these sites are usually the closest to the development they are often most at risk of impact from shadow flicker and noise. These will both impact the historical setting of the monument. They are also most likely to suffer a high impact, again due to proximity, making the turbine a dominant feature.

As can be seen from the map generated by PastMap (Image 7.3), the Cup Marked Stone was discovered in a location which is nearby the proposed turbine site. As such, the development could potentially impact on the site heavily; however, the cup is no longer in situ and will not be impacted by the turbine at all. Although the discovery site is close to the turbine, there is no marker to identify the site as being of importance which would suggest that the site does not attract tourists or historians. From analysis, it is possible to conclude that the Cup Marked Stone will not be impacted by the development at land southwest of Auchentiber Bridge.

e. Conservation Areas

The Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997 states that conservation areas are "*areas of special architectural or historic interest, the character or appearance of which it is desirable to preserve or enhance*"[101]. Local authorities have a statutory duty to identify and designate such areas[102].

Within a 5km radius of the development site at Auchentiber Bridge, there is one designated conservation area; *Kilmacolm Conservation Area*. Part of the village of Kilmacolm has been designated as a conservation area, and 'the quality of the buildings ensures that it remains a much sought after residential village'[103]. With such a designation, it has ensured that the area has not been negatively impacted by development or demolition. Designation as a conservation area does not place a ban upon all new development within its boundaries[104]. However, new development will normally only be granted planning permission if it can be demonstrated that it will not harm the character or appearance of the area[105].

Impacts

As can be seen from the map generated (Appendix, Figure 7.1), the town of Kilmacolm will theoretically experience views of the turbine development at Auchentiber Bridge. In reality however, the village will be largely unaffected by the development, located approximately

Monuments data made available through this web site, or Pastmap, or the WoSAS Interactive map search, is published for public information purposes only. The data should not be used for any development control or land management purposes without appropriate professional archaeological advice".

[101] Scottish Executive Development Department, A Guide to Conservation areas in Scotland: http://www.scotland.gov.uk/Resource/Doc/37428/0009675.pdf

[102] Inverclyde Council, Assessment of Proposed Kilmacolm Cross Conservation Area (2012)

[103] Inverclyde Council, About Kilmacolm: http://www.inverclyde.gov.uk/tourism-and-visitor-attractions/a-quick-tour-of-inverclyde/about-kilmacolm

[104] Scottish Executive Development Department, A Guide to Conservation areas in Scotland: http://www.scotland.gov.uk/Resource/Doc/37428/0009675.pdf

[105] Scottish Executive Development Department, A Guide to Conservation areas in Scotland: http://www.scotland.gov.uk/Resource/Doc/37428/0009675.pdf

3.3km southeast of the turbine site. The section of Kilmacolm designated as a Conservation Area is located approximately 4.6km southeast of the development site, on the easternmost boundary of the village. Although the ZTV suggests that individuals within the Conservation Area may have views of the proposed turbine, it is more likely that high degrees of visual mitigation will be provided by the intervening landscape. As stated previously, the ZTV does not account for artificial elevations such as buildings, which could experience views from upper floors. However, due to the distance at which the development is located from the Conservation Area, along with the vegetation and buildings within the village of Kilmacolm, and the intervening landscape, it is unlikely that the designated area will be adversely affected visually by the turbine.

Cumulative Impact

It is not perceived that the Conservation Area of Kilmacolm will be adversely impacted by cumulative turbines, when taking into account the proposed development at land southwest of Auchentiber Bridge. Due to the intervening distance between wind energy developments such as that proposed, and the designated area, views will be interrupted by vegetation and buildings within the village of Kilmacolm and surrounding landscape. Although the single turbine at High Mathernock Farm, and the two turbines at Priestside Farm, are located in closer proximity to the Conservation Area, views of these structures will again be afforded significant levels of visual screening. Cumulatively, in combination with the proposed turbine at Auchentiber Bridge, views of all four structures will be highly unlikely by virtue of the siting of the turbines in relation to the topographic nature of the land, along with the screening provided by vegetation, and buildings both in the village of Kilmacolm and a number of sporadically sited farmhouses in the area.

f. Gardens and Designed Landscapes

Within a 5km radius of the development site, there are two Gardens and Designed Landscapes:

1. Duchal House;
2. Finlaystone House.

Duchal House

Description: Duchal is a good example of a formal late 17th/early 18th century designed landscape into which later overlays have been well integrated. The site is of medium-size, formal landscape, characteristic of the late 17th/early 18th century and incorporating later 18th and 19th century modifications[106].

Values:	Work of Art:	High
	Historical:	Outstanding
	Horticultural:	High

[106] Duchal House, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2400:15:0::::GARDEN:GDL00146

Architectural:	Outstanding
Scenic:	High
Nature Conservation:	High
Archaeological:	Some

Finlaystone House

Description: This impressive designed landscape comprises of very attractive gardens, important architectural features, valuable wildlife habitats, and trees and parkland that all together make a big contribution to the local scenery[107]. The designed landscape in its present form was laid out between 1750 and 1860.

Values:	Work of Art:	High
	Historical:	Outstanding
	Horticultural:	High
	Architectural:	Outstanding
	Scenic:	High
	Nature Conservation:	Outstanding

Impacts

As can be seen from the Historic Map generated and attached (Appendix A, Figure 7.1), both Finlaystone House and Duchal House Gardens and Designed Landscapes fall outwith the ZTV for the proposed development. Intervening topography and vegetation will screen the turbine from views and as such, the G&DL's will be unaffected by the development at land southwest of Auchentiber Bridge.

7.5 Physical Impacts

There will be no direct physical impact on any sites of cultural significance as there are no designated sites within the footprint of the proposed development. It is therefore perceived that construction relating to site access, ground works, drainage or turbine installation will not have any physical effects on any sites of archaeological importance.

[107] Finlaystone House, Historic Scotland: http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2400:15:0::::GARDEN:GDL00180

7.6 Overall Impact on Historic Environment

The ZTV included in the Appendix of this report indicates that the historic environment in this area should be largely unaffected by siting a single turbine at the proposed location. It should also be considered that the ZTV does not take into account all vegetation or buildings within the landscape which may also reduce the visibility of the turbine at this location.

As discussed, the AA battery and camp at High Mathernock may experience views of the proposed turbine at land southwest of Auchentiber Bridge; however views will be broken and screened by the established trees that line the bank of Gryfe Water which runs between the SAM and development site. The second SAM which falls within the ZTV is that of Dowries Cairn, which, at a distance of 4.8km, will potentially have distant elevated views of the proposed turbine, though the impact will be low. Overall, it is perceived that the impact to Scheduled Ancient Monuments within the local landscape will be low, by virtue of vegetative screening and distance.

Again the overall impact to Listed Buildings within the local landscape is perceived to be low, with screening being provided in the form of trees, buildings and the natural undulations of the surrounding landscape.

The same is said for the Gardens and Designed Landscapes within the area, which will be unaffected by the proposed turbine at land southwest of Auchentiber Bridge. Due to the topography of the landscape, both Finlaystone and Duchal House G&DLs will not experience views of the proposed turbine, leading to a negligible impact on these sites of historical importance.

The overall impact to the Conservation Area of Kilmacolm is also perceived to be negligible, as a result of the screening afforded from the buildings within the village itself, and the elevations within the intervening landscape (e.g. trees, buildings, farm complexes). The distance at which the Conservation Area is located in relation to the development site will also minimise the impact of the turbine on the village of Kilmacolm, allowing residents and visitors to the area to experience the historic area without impact from the modern installation at land southwest of Auchentiber Bridge.

The closest historic site to the development is the Cup Marked Stone registered on the NMRS/SSMR. This monument would be impacted greatest as a result of the turbine development, however as the stone has been removed and relocated, it is not perceived that the historic setting of the site is of great importance. As a result, the overall impact to this monument is considered to be low.

On the whole, the overall impact to the historic environment surrounding the development site at land southwest of Auchentiber Bridge is considered to be low. The development of a single turbine at the development site will pose little risk of noise and shadow flicker to any sites of historical significance within the local area. Although the impacts will be increased for those

sites within close proximity to the development, namely those within the land boundary, the monuments are of a lesser archaeological importance, attracting few visitors and are located within an agricultural field.

7.7 Mitigation Measures

It is perceived that the proposed wind turbine will have a potential impact upon the areas cultural heritage if the turbine is not sited correctly in the landscape. The historic landscape has therefore been considered with utmost importance when designing this development. Through design and siting, the turbine has been positioned to reduce the impacts posed to historical features within the local landscape, lowering the overall impact of the development to an acceptable level.

It is also important to consider that this development is of a temporary nature and is presumed to only exist in the landscape for 25 years. At this point the turbine will be removed from the site and tracks will be reinstated through the use of topsoil, and underground cables cut.

8 ECOLOGY

A full assessment of the impact of the proposed turbine upon local ecology has been written by Machars Ecology Limited. The report entitled, *Ecology Report for a proposed renewable energy development at Auchentiber Bridge* will be submitted in due course.

9 SOIL AND HYDROLOGICAL ASSESSMENT

An assessment of the potential effects on geology and hydrology was carried out through a desk-based assessment and a site survey. Best practice legislation and guidance notes were consulted for conducting the hydrological assessment. Scottish local policy and guidance which were consulted include:

- NPPG 7 Planning and Flooding;
- SEPA Policy no. 19: Groundwater protection policy for Scotland;
- SEPA Pollution Prevention Guidance Notes (PPG):
  - PPG 1: General guide to the prevention of water pollution;
  - PPG 5: Works in, near of liable to affect watercourses;
  - PPG 6: Working at construction and demolition sites;
  - PPG 21: Pollution incident response planning;
- CIRIA Report C532: Control of Water pollution from Construction Sites;
- CIRIA Report C502: Environmental Good Practice on Site.

9.1 Soil Landscape

The development site at land southwest of Auchentiber Bridge is within the 'central lowlands,' which extends across Scotland between the mountains of the Highlands and the hills of the Southern Uplands[108]. Apart from forestry and agriculture, the main land use in this Central Belt is urban and industrial, with both Glasgow and Edinburgh accommodating the largest proportion of the Scottish population.

a. Soil Characteristics of the Site

The soil type within the development area consists of soil from the *Darleith* series, which belongs to the brown earths major soil subgroup. The soil is well drained, with bright colours and a mineral topsoil[109].

[108] SNH, The Soil Landscapes of Scotland, The Central Lowlands, http://www.snh.org.uk/publications/on-line/livinglandscapes/soils/soillandscapes.asp

[109] The Macaulay Land Use Research Institute, Soil Indicators For Scottish Soils, http://sifss.macaulay.ac.uk/SSKIB_Stats.php

b. Land Capability

As highlighted in the '*Land Capability for Agriculture in Scotland'* map created by The Macaulay Land Use Research Institute[110], the development site at Auchentiber Bridge is considered to fall within the "*Land capable of supporting Mixed Agriculture*". Categorised as Class 4.2, the land is considered "*primarily suited to grassland with some limited potential for other crops (barley, oats and forage crops)"*[111]. The site is not categorised as prime agricultural land (*i.e. which are classes 1, 2 and 3.1 in the Macaulay Land Classification System*), and is currently utilised for grazing. This proposal presents a rural diversification opportunity at the site which would allow for continued farming practices on land which has been recognised as constrained.

9.2 Hydrology

a. Hydrological Characteristics of the Site

At the proposed turbine site, the land appears to have good drainage, as indicated by the soil characteristic description by the Macaulay Institute noted previously. The main hydrological feature within the vicinity of the site is that of Gryfe Water, situated approximately 228m directly south.

There are two issues near the development site which feed into the larger body of Gryfe Water to the south. Approximately 441m northwest of the turbine site, an issue forms within the established forestry block; travelling in a southerly direction to the river. To the north of the turbine at a distance of 429m, another issue forms, which then flows southwards to the east of the turbine site, down into Gryfe Water.

Drainage systems are also present to the west of the site, approximately 404m from where the proposed turbine is located. These drainage systems are separated from the site location by the forestry block neighbouring the land boundary. It is perceived that the wind turbine development will have no significant impact on Gryfe Water due to its proximity away from the site. Drainage systems will not be impacted upon, due in part to the developments scale and it's siting in relation to drainage systems.

b. Surface and Ground Water Hydrology

Understanding surface and groundwater environments is critically important to designing a successful project. Surface water includes watercourses, water bodies and runoff. Groundwater includes all water stored in permeable underground strata (or aquifers). In any construction project, it is important to understand where and how these relate to each other, so that the project can be designed to minimise the risk of pollution or any other potential impacts. Surface water provides important water resources for potable and other supply; amenity; aesthetic value; conservation and ecological environments; and importantly, recharges the

[110] The Macaulay Land Use Research Institute: http://www.macaulay.ac.uk/explorescotland/lca_map.pdf
[111] The Macaulay Land Use Research Institute: http://www.macaulay.ac.uk/explorescotland/lca_map.pdf

ground water systems. Key pollution concerns for surface water from a project like this are: sediment erosion and contained silt; contaminated ground water from any dewatering activities; and modifications or destruction of habitats.

At this site there will be no risk to the surface or ground water hydrology as mitigation measures will be taken to ensure there is no contamination.

Hydrology and the potential effects of drainage from turbine, access tracks and other ancillary development will be considered, as there could be significant effects on or adjacent to the application site. Watercourses, underground streams and private springs will be avoided, and private water supplies will not be adversely affected.

c. Water Abstraction

Water abstractions are regulated under The Water Environment (Controlled Activities) (Scotland) Regulations 2005 (as amended). SEPA request that all abstraction of water practices be highlighted within planning applications.

As a result, it is important to note that no abstraction of water will take place during this development at any stage of construction, operation or decommissioning.

d. Engineering activities in the water environment

The Water Framework Directive states that developments should be designed, where possible, to avoid engineering activities in the water environment. This includes water sources such as burns, rivers, lochs, wetlands, groundwater and reservoirs. This turbine development has been sited to ensure that Gryfe Water and other water courses are located as far away from the infrastructure as feasibly possible. In accordance with the Water Framework Directive, any engineering activities which would interfere with the water environment onsite will be avoided.

e. Water Ecology

During the planning stage of this development, the location of the turbine was chosen to comply with the recommended separation distance between development and watercourses. It is not perceived that any water habitats will be adversely affected by this development, at any stage during construction, operation or decommissioning.

f. Flood Risk

The site location is situated at a height of 152m above sea level, in an area deemed not at flood risk by the Scottish Environmental Protection Agency (SEPA)[112]. Flood risk areas are defined as areas at risk of flooding from rivers and/or the sea. The nearest area at risk of flooding from a river is the area surrounding Gryfe Water, approximately 228m south of the turbine site. As there is little risk of flooding at the proposed turbine location, the potential impacts on hydrology in the vicinity of the development are considerably lowered. This is especially significant during the construction phase of the development.

[112] SEPA, Indicative River & Coastal Flood Map, http://go.mappoint.net/sepa/

10 NOISE ASSESSMENT

The noise levels of a turbine depend on various factors, such as the turbine's power level, background noise, wind speed and the sensitivity of nearby dwellings etc. In general, the turbine proposed in this development is quiet in operation.

10.1 Wind Turbine Noise Characteristics

Noise is generated by wind turbines as they rotate to generate power. This only occurs above the 'cut-in' wind speed and below the 'cut-out' wind speed. Below the cut-in wind speed there is insufficient strength in the wind to generate efficiently and above the cut-out wind speed the turbine is automatically shut down to prevent any malfunctions from occurring. The cut-in speed at turbine hub height is normally between 3 and 5 metres per second (m/s) and the cut out wind speed is normally around 25 m/s.

The principal sources of noise are from the blades rotating in the air (aerodynamic noise), the internal machinery (normally the gearbox) and, to a lesser extent, the generator (mechanical noise). The blades are carefully designed to minimise noise whilst optimising power transfer from the wind. The nacelle at the top of the tower is insulated to minimise noise radiation from the gearbox, generator and other components, which are also isolated from the tower and the blade assembly to prevent structure borne noise.

10.2 Noise in the Environment

Although the noise levels are of a benign nature, wind turbines and farms are usually situated in rural environments where there are few other sources of noise. When wind speeds are high, this is not a problem since any noise is normally masked by wind induced noise effects, particularly that of the trees being blown. On the other hand, at lower wind speeds, or in particularly sheltered locations, the wind induced background noise may not be sufficient to mask any noise from the turbines. However, under these conditions, the generated noise levels may be so low as to create very little impact.

Noise levels are normally expressed in decibels (dB). Noise in the environment is measured using the dB(A) scale, which includes a correction for the response of the human ear to noises with different frequency content. PAN 1/2011, Planning and Noise, states that "*For noise of a similar character, a change of 3 dB(A) is the minimum perceptible under normal conditions, and a change of 10 dB(A) corresponds roughly to halving or doubling the loudness of a sound*"[113].

Since the early 1990s there has been significant reduction in the mechanical noise generated by wind turbines, it is now usually less than, or of a similar level to, aerodynamic noise. Aerodynamic noise from wind turbines is generally unobtrusive; it is broad band in nature and in this respect similar to, for example, the noise of wind in trees.

[113] Scottish Government, PAN1/2011: Planning and Noise, http://www.scotland.gov.uk/Resource/Doc/343210/0114180.pdf

Wind generated background noise increases with wind speed at a faster rate than wind turbine noise increases with wind speed. The difference between the noise of the wind turbine and background noise is therefore liable to be greatest at low wind speeds. Varying the speed of the turbines in such conditions can, if necessary, reduce the sound output from modern turbines.

10.3 Guidelines for Wind Turbine Noise

"*The Assessment and Rating of Noise from Wind Farms*" (ETSU-R-97) is the guidance report used for all wind energy developments in the UK. It presents a framework to measure the noise from wind turbines and to derive suitable noise limits which offer reasonable protection to neighbours. The main findings are set out below:

- Noise limits should be applied to external locations and should apply only to those areas frequently used for relaxation or activities for which a quiet environment is highly desirable;

- A fixed limit of 43dB(A) is recommended for night-time. This is based on a sleep disturbance criteria of 35dB(A) with an allowance of 10dB(A) for attenuation through an open window (free field to internal) and 2dB(A) subtracted to account for the use of $L_{A90, 10min}$ rather than $L_{Aeq, 10min}$;[114]

- Both day- and night-time lower fixed limits can be increased to 45dB(A) to increase the permissible margin above background where the occupier of the property has some financial interest in the wind farm;

- In low noise environments the day-time level of the $L_{A90, 10min}$ of the wind farm noise should be limited to an absolute level within the range of 35-40 dB(A). The actual value chosen within this range should depend upon: The number of dwellings in the neighbourhood of the wind farm; the effect of noise limits on the number of kWh generated; and the duration of the level of exposure;

- For single turbines or wind farms with very large separation distances between the turbines and the nearest properties, a simplified noise condition may be suitable. If the noise is limited to an $L_{A90,10min}$ of 35dB(A) up to wind speeds of 10m/s at 10m height, then this condition alone would offer sufficient protection of amenity, and background noise surveys would be unnecessary.

Local Planning Authorities will usually consider this simplified noise condition (previous bullet point) sufficient to protect neighbouring residents.

Table 10.1 compares typical levels of noise in the environment.

[114] $L_{A90, 10 min}$ is the dB(A) level exceeded 90% of the time over a 10 minute period, as opposed to $L_{Aeq, 10 min}$, which is the continuous sound pressure levels, in dB(A), over a 10 minute period.

TABLE 10.1: INDICATIVE NOISE LEVELS[115]

Source / Activity	Indicative noise level dB(A)
Threshold of pain	140
Jet aircraft at 250m	105
Pneumatic drill at 7m	95
Truck at 30mph at 100m	65
Busy general office	60
Car at 40mph at 100m	55
Quiet bedroom	35
Rural night-time background	20-40
Threshold of hearing	0

In regards to the development proposed in this document, various measures have been put in place to avoid noise nuisance. Where possible, terrain shielding and noise barriers have been established to reduce any noise impacts further.

10.4 Noise Propagation Assessment

a. Site Assessment

Through desk based and site surveys, the turbine has been positioned at such a distance to create the appropriate separation between the development and any noise sensitive areas. To further demonstrate that any nearby properties will not be impacted by noise, a propagation model analysis has been conducted.

The wind turbine proposal is surrounded by open farmland, the closest noise sensitive receptor to the development being Gryfe Lea, which lies 729m west southwest. The second closest noise sensitive receptor is Auchentiber Farm which is located approximately 754m northwest of the development site. There are several other residential properties surrounding the site which have been taken into consideration.

b. Assessment Criteria

ETSU-R-97 states:

"*For single turbines or wind farms with very large separation distances between the turbines and the nearest properties a simplified noise condition may be suitable. We are at the opinion that, if the noise is limited to an LA90,10min of 35dB(A) up to wind speeds of 10m/s at a 10m height, then this condition alone would offer sufficient protection of amenity, and background noise surveys would be unnecessary*".

[115] Adapted from PAN1/2011

Therefore, it is proposed that if properties are not receiving direct financial gain, then the noise limits should be fixed at the worst case scenario of 35dB(A) in 10m/s wind.

ISO 9613-2 Propagation Algorithm

Based on the findings of a Joint European Commission research project into wind farm noise propagation over large distances, see '*Development of a Wind Farm Noise Prediction Model',* JOULE project JOR3-CT95-0051, with regard to outdoor sound propagation, ISO9613 has been deemed the most robust prediction method.

In accordance with ISO 9613-2, the following factors influence sound propagation outdoors;

- Geometric divergence;
- Air absorption;
- Reflecting obstacles;
- Screening;
- Vegetation; and
- Ground reflections.

The ISO 9613 algorithms take as their acoustic input data the octave band sound power output of the turbines and calculate, on an octave band basis, attenuation due to geometric spreading, atmospheric absorption and ground effects.

For the purposes of this assessment, all noise level predictions have been undertaken using the following assumptions:

- Down-wind propagation from each individual turbine;
- Hemi-spherical source characteristics;
- Ground absorption G=0.5;
- A receiver height of 4m above ground level;
- No screening effects from topography, vegetation or intervening buildings and structures; and
- An air absorption factor based on a temperature of 10°C and 70% relative humidity.

It should be noted that the assessment methodology is precautionary.

c. Results

Wind turbine operational noise levels at the nearest noise sensitive receptors have been predicted using the noise emission characteristics of the Gamesa G52, provided in the following submitted document, '*G52 850kW 50/60 Hz Wind Turbine Power and Noise Emission Curves*', and the noise propagation model algorithm outlined in ISO 9613-2. The predicted noise levels were then compared with the ETSU simplified noise condition limits.

Proposed Turbine Noise

Table 10.2 shows the nearest residential dwellings, their distance from the proposed turbine and the predicted noise levels at these properties in relation to the $L_{Aeq,10min}$. A map showing the predicted noise levels is attached as Figure 10.1 in the Appendix.

TABLE 10.2: DISTANCE FROM TURBINE TO NEAREST NOISE RECEPTORS AND NOISE LEVEL

House	Location	Distance to Wind Turbine	Predicted dB(A) in 10m/s wind	Excess of Noise Limit dB(A)
H1	**Horsecraigs (The Haven)**	921m	31.64	n/a
H2	**Auchenfoyle New Cottage**	665m	34.55	n/a
H3	**Auchenfoyle**	656m	34.81	n/a
H4	**Gryfe Lea and Donmoir Cottages**	757m	33.66	n/a
H5	**House southwest of Gryfe Lea**	1km	30.03	n/a
H6	**Auchentiber**	767m	33.27	n/a
H7	**High Mathernock Farmhouse**	988m	30.98	n/a
H8	**High Mathernock House**	968m	31.16	n/a

Wind Turbine Noise Level Assessment Summary

Figure 10.1 in the Appendix shows the turbine location, the nearest noise sensitive receptors and the dB(A) noise level bandings. From Figure 10.1 and Table 10.2, it is possible to conclude that the predicted noise levels at residents near the development will be within the fixed limits outlined within ETSU-R-97. It is also important to note that due to the high levels of vegetation surrounding the properties and the activity on the working farms within the area, the background noise level at the site will be high. As such the noise generated from the turbine will be inaudible to those living within the area.

It can be concluded from the noise propagation assessment that noise levels emitted from the proposed wind turbine at land southwest of Auchentiber Bridge, are predicted to meet the daytime noise limit used by ETSU at all the properties surrounding the development. Subsequently, this should negate the requirement for a site specific background noise assessment.

11 SHADOW FLICKER

11.1 Introduction

This assessment examines the potential effects of shadow flicker produced by the inclusion of a wind energy development at Land southwest of Auchentiber Bridge. Shadow flicker is the term used to describe the effect on residential amenity produced by the intermittent casting of shadow upon a particular location by the rotating blades of a wind turbine.

This chapter quantifies the geographical area over which shadow flicker could potentially occur and sets out an assessment of the duration and timing of these effects under the "worst case scenario" produced in the vicinity of the Auchentiber Bridge development. It also seeks to identify measures that could be employed to mitigate any impacts, if deemed necessary, as a result of the assessment.

Current Scottish Planning Policy[116], supplemented by online renewable advice note *Onshore Wind Turbines*[117], describes shadow flicker:

Shadow flicker occurs only within buildings where the flicker appears through a narrow window opening. The seasonal duration of this effect can be calculated from the geometry of the machine and the latitude of the potential site.

In addition to Scottish Planning Policy, Planning for Renewable Energy, A Companion Guide to PPS22[118] (UK legislation), describes the conditions in the UK under which shadow flicker may occur:

- Only properties within 130 degrees either side of north of the proposed development can be affected at UK latitudes.
- Shadow flicker has been proven to occur only within ten times rotor diameter of a given developments location.

Furthermore, the online renewable advice note on Onshore Wind Turbines continues; w*here this could be a problem, developers should provide calculations to quantify the effect. In most cases however where separation is provided between wind turbines and nearby dwellings (as a general rule 10 rotor diameters), "shadow flicker" should not be a problem. However, there is scope to vary layout / reduce the height of turbines in extreme cases.*

[116]Scottish Planning Policy, http://www.scotland.gov.uk/Publications/2010/02/03132605/12
[117] Online renewable advice note, Onshore Wind Turbines, http://www.scotland.gov.uk/Resource/0040/00405870.pdf
[118]Planning for Renewable Energy, A Companion Guide to PPS22: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/7779/147447.pdf

11.2 Methodology

Planning guidance in the UK requires developers to investigate the impact of shadow flicker upon dwellings situated within the described separation distance, but does not specify methodologies.

Currently within the UK, only Northern Ireland[119] prescribes legislative requirements for the minimisation of shadow flicker. On this basis, in order to define the significance of effects, the Northern Ireland guidelines have been adopted as the reference for this project. They state that shadow flicker should not exceed, under the worst case scenario;

- 30 hours per year, or
- 30 minutes per day.

Any predicted shadow flicker effect that is less than the Northern Ireland guidelines of 30 minutes per day and/or 30 hours per year is deemed to be of negligible magnitude and therefore not significant.

For an accurate assessment of shadow flicker, computer modelling is required, taking into account the dimensions of the development and the movement of the sun throughout the year. This modelling was carried out under the premise of the 'worst case scenario' using Resoft Windfarm© software with the following imputed parameters;

- The location and dimensions of the proposed development;
- The location of properties within the vicinity of the development; and
- The estimated dimensions and orientations of windows facing the proposed development.

The 'worst case scenario' for the effects of shadow flicker can be defined as;

- Continuous sunshine throughout daylight hours;
- Continually rotating turbine blades;
- No vegetation or other obstacles are screening the receptor; and
- The wind turbine rotor plane is always perpendicular to the receptor and sun.

Health Effects and Nuisance

The March 2011 report commissioned by The Department of Energy and Climate Change "Update of UK Shadow Flicker Evidence Base"[120] states the health effects and nuisance of the shadow flicker effect;

[119]Best Practice Guidance to Planning Policy Statement 18 'Renewable Energy' http://www.planningni.gov.uk/index/policy/policy_publications/planning_statements/planning_policy_statement_18__renewable_energy__best_practice_guidance.pdf

[120]Dept. of Energy and Climate Change, Update of UK Shadow Flicker Evidence Base, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/48052/1416-update-uk-shadow-flicker-evidence-base.pdf

On health effects and nuisance of the shadow flicker effect, it is considered that the frequency of the flickering caused by the wind turbine rotation is such that it should not cause a significant risk to health. Mitigation measures which have been employed to operational wind farms such as turbine shut down strategies, have proved very successful, to the extent that ***shadow flicker cannot be considered to be a major issue in the UK****.*

11.3 Baseline Information

The proposed development at land southwest of Auchentiber Bridge has a rotor diameter of 52m. The area of study was defined based upon a distance of ten rotor diameters (520m) from the proposed site, in accordance with the online renewable advice note for Onshore Wind Turbines. Onsite visits along with OS digital mapping concluded that there are no properties within this 520m study area of the development. However, in order to demonstrate that the development will not generate any shadow flicker impact, the nearest properties to the development site were included in the calculation.

TABLE 11.1: DWELLINGS INCLUDED WITHIN THE ASSESSMENT FOR THE PROPOSED DEVELOPMENT AT LAND SOUTHWEST OF AUCHENTIBER BRIDGE

House ID	Property	Distance to the Proposed Development	Included within Assessment
H1	**Horsecraigs (The Haven)**	921m	Yes
H2	**Auchenfoyle New Cottage**	665m	Yes
H3	**Auchenfoyle Farmhouse**	656m	Yes
H4	**Gryfe Lea and Donmoir Cottages**	757m	Yes
H5	**House southwest of Gryfe Lea**	1km	Yes
H6	**Auchentiber**	767m	Yes
H7	**High Mathernock Farmhouse**	988m	Yes
H8	**High Mathernock House**	968m	Yes

The sizes and orientations of windows at the properties were estimated during a site visit, from areas of public access.

In practice it is likely that the effects of shadow flicker would occur for considerably less time than the 'worst case scenario' prediction as described above, for the following reasons;

- Information provided by the Met Office[121], indicates that in the UK continuous sunshine occurs for approximately 35% of daylight hours. At other times, the shadows cast by the proposed development are unlikely to be sufficiently pronounced to illicit shadow flicker effects.
- At times when there is insufficient wind to move the turbine, the effects of shadow flicker cannot be produced.
- Receptors with screening elements would see a further reduction of effects.

At times when the proposed development is not perpendicular to the receptor and sun, the duration of shadow flicker effects would be reduced due to the elliptical shape of the shadow cast.

[121]In the UK, on average there are 4380 hours of daylight per year. Data from the closest Met Office weather station, Glasgow/Bishopton indicate that this region of Inverclyde will receive 1348 hours of daylight based upon the mean value recorded between the years 1981-2010.

TABLE 11.2: RESULTS OF SHADOW FLICKER ASSESSMENT FOR THE PROPOSED DEVELOPMENT AT LAND SOUTHWEST OF AUCHENTIBER BRIDGE

Property.	Estimation of window size, height above ground and orientation from north.	Total hours of shadow flicker per year.	Shadow flicker days per year.	Maximum shadow flicker minutes per day.
Horsecraigs, northeast aspect	Modelled window at 2.0m height. Dimensions 1.0 x 1.0m. Orientation 45 Degrees.	0	0	0
Auchenfoyle New Cottage, northeast aspect	Modelled window at 2.0m height. Dimensions 1.0 x 1.0m. Orientation 45 Degrees.	0	0	0
Auchenfoyle Farmhouse, northeast aspect	Modelled window at 2.0m height. Dimensions 1.0 x 1.0m. Orientation 45 Degrees.	0	0	0
Gryfe Lea and Donmoir Cottages, east aspect	Modelled window at 2.0m height. Dimensions 1.0 x 1.0m. Orientation 90 Degrees.	6.4	26	19.2
House southwest of Gryfe Lea, northeast aspect	Modelled window at 2.0m height. Dimensions 1.0 x 1.0m. Orientation 135 Degrees.	3.6	20	13.8
Auchentiber, northeast aspect	Modelled window at 2.0m height. Dimensions 1.0 x 1.0m. Orientation 45 Degrees.	0	0	0
High Mathernock Farmhouse, north aspect	Modelled window at 2.0m height. Dimensions 1.0 x 1.0m. Orientation 0 Degrees.	4.3	22	14.4
High Mathernock House, northeast aspect	Modelled window at 2.0m height. Dimensions 1.0 x 1.0m. Orientation 15 Degrees.	5.1	26	15

IMAGE 11.1: OCCURRENCE OF SHADOW FLICKER THROUGHOUT THE YEAR FROM DEVELOPMENT AT LAND SOUTHWEST OF AUCHENTIBER BRIDGE

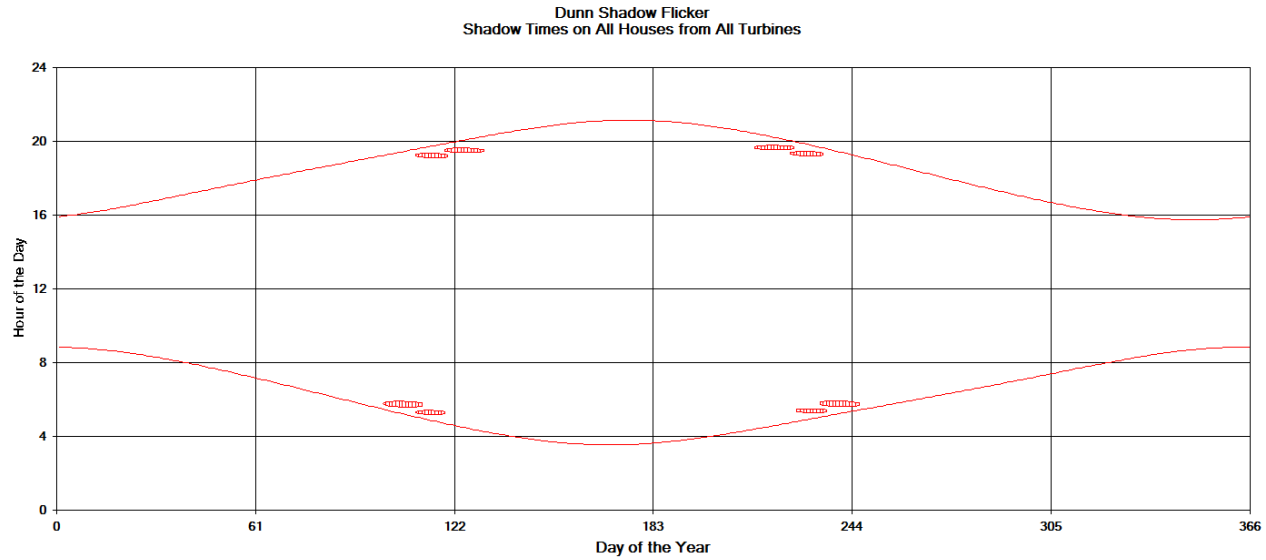


Image 11.1 shows the rising and setting of the sun (smooth red lines) throughout the calendar year. Where shadow flicker is predicted to occur, it is represented by hatched areas within the lines. As can be seen from Image 11.1, there is the potential for certain properties to experience a degree of shadow flicker at certain points during the year.

TABLE 11.3: RESULTS OF SHADOW FLICKER ASSESSMENT FOR THE PROPOSED DEVELOPMENT AT LAND SOUTHWEST OF AUCHENTIBER BRIDGE

Property	Exceeding the Northern Ireland guidance of 30 shadow hours per year	Exceeding the Northern Ireland guidance of 30 shadow minutes per day
Horsecraigs (The Haven)	No, there will be no impact to this property.	No, there will be no impact to this property.
Auchenfoyle New Cottage	No, there will be no impact to this property.	No, there will be no impact to this property.
Auchenfoyle Farmhouse	No, there will be no impact to this property.	No, there will be no impact to this property.
Gryfe Lea and Donmoir Cottages	No, properties to experience 23.6 hrs below limit.	No, properties to experience 10.8 mins below limit.
House southwest of Gryfe Lea	No, property to experience 26.4 hrs below limit.	No, property to experience 16.2 mins below limit.
Auchentiber	No, there will be no impact to this property.	No, there will be no impact to this property.
High Mathernock Farmhouse	No, property to experience 25.7 hrs below limit.	No, property to experience 15.6 mins below limit.
High Mathernock House	No, property to experience 24.9 hrs below limit.	No, property to experience 15 mins below limit.

Figure 11.1 (Appendix) illustrates the 'worst case scenario' of shadow flicker. Figure 11.1 and Figure 11.2 show that the properties surrounding the development site at Auchentiber Bridge fall outwith the areas affected by shadow flicker. Although Table 11.2 highlights the potential for properties surrounding the development site to experience a degree of shadow flicker, the impact on the residences does not exceed the limits set out in guidance. As such, due to the separation distance between the properties and development, along with the vegetative cover within the landscape, the dwellings will be largely unaffected by shadow flicker from the proposed turbine.

The Northern Ireland guidelines for shadow flicker have not been exceeded at the properties assessed, and therefore the effects of shadow flicker will be negligible at this site.

11.4 Mitigation

Where significant effects are identified, mitigation measures are to be proposed in order to prevent shadow flicker from occurring or to reduce its intensity, noting that the effects experienced in practice are likely to be much less than the 'worst case scenario'. In this instance, there are no properties which will be adversely affected by shadow flicker to the extent where it exceeds limits set in guidance. As such, mitigation at this site is deemed to be unnecessary.

12 AVIATION EFFECTS

Wind turbines can at times interfere with Air Traffic Control Radar. The blade movement can cause intermittent detection by radars whilst in operation. This problem occurs when the wind turbine blades are in line of sight of the radar antenna. Due to their height, they can also impact upon airports and airfields if they project into the safeguarding surface above and around them.

VG Energy has a suite of GIS based maps for MOD, NATS en-route and ATC line of sight. These maps show that the turbine development should not be in the line of sight to any of these installations, although we understand that consultation with the relevant parties will also be required.

Should an objection be raised on safeguarding grounds VG Energy would like the opportunity, where suitable, to submit an independent third party assessment of any potential impact on radar installations. This assessment will provide clear modelling and analysis of the effect of the proposed turbine upon the radar installation. VG Energy request that Local Authorities allow us, as developers, sufficient time to commission this report, should it be required, in order to avoid needlessly withdrawing this application.

13 TRAFFIC AND TRANSPORT

13.1 Introduction

This chapter addresses the logistical concerns associated with the installation of a single Gamesa G52 wind turbine at Land southwest of Auchentiber Bridge, Inverclyde.

The following concerns will be discussed in this report:

- The specifications of vehicles used to deliver the turbine components;
- The preferred delivery route for the turbine components; and
- The intended number of site deliveries and tonnage for all aspects of temporary and permanent works.

13.2 Development Specifications

The proposed development includes the proposed Gamesa G52 turbine, foundations, access track, crane pad and associated infrastructure, an on-site control unit system and a meter house.

The turbine details as proposed for this project are as follows:

TABLE 13.1: TURBINE SPECIFICATIONS

No. of Turbines	1 x Gamesa G52
Hub Height	44m
Rotor Diameter	52m
Height to blade tip (max.)	70m

A Gamesa G52 turbine has been selected as it is considered to be the most suitable typology of turbine for the site and the surrounding landscape. The weight and dimensions of the Gamesa G52 components which will be transported to the site at Land southwest of Auchentiber Bridge are outlined in Table 13.2

TABLE 13.2: SIZE AND WEIGHT OF GAMESA COMPONENTS

Turbine Component	Length (m)	Width (m)	Height (m)	Net weight (tonnes)
Nacelle in transport frame	7.09	2.29	2.32	25
Hub	2.60	2.29	2.32	3.5
3 blades in container	30.67	3.26	1.63	16
Tower top section	24.44	2.44	-	20
Tower base section	17.68	3.15	-	23.6

TABLE 13.3: VEHICLE DIMENSIONS REQUIRED FOR THE DELIVERY OF TURBINE COMPONENTS.

Turbine Component	Vehicle Dimensions (loaded dimensions)
Nacelle and Hub	17.5m x 2.5m x 4.0m x 48tonnes (4 axle semi low loader)
Tower sections : Base section Top section	 22m x 3.15m x 4.6m x 48tonnes (5 axle steering semi low loader) 31m x 2.5m x 4.2m x 45tonnes (steering flat trailer)
Blade Container	35m x 3.26m x 4.20m x 38tonnes (4 axle blade trailer)

13.3 Width, Length and Weight Allowances

The length, width and weight allowances for vehicles using the public road network are set out in the Roads and Vehicles (Authorisation of Special Types) (General) Order 2003. The general allowances are outlined as:

Overall Length: **18.0 metres (exceeding 30.0m requires a Special Order)**

Overall Width: **3.0 metres**

Overall Weight: **44 tonnes**

Any vehicles exceeding these allowances require a notification to the chief of police for each area that the vehicle passes through two days prior to doing so. As part of the Traffic

Management Plan, the haulage company will inform the relevant authorities which delivery vehicles exceed the above allowances and require Permits/Orders or Escorting Vehicles.

For the development at Land southwest of Auchentiber Bridge, Special Order Permits will be sought for the vehicles transporting the nacelle and hub, tower sections and blades as they are in excess of the permitted length and/or weight allowances for the public highway.

13.4 Proposed Route

Delivery of Turbine Components

The turbines will be dispatched from overseas and delivered to the nearest port in accordance with UK Policy. From the port of entry, the turbine components will be delivered to the site via the public road network. The available routes have been analysed utilising aerial mapping. This has led to the identification of a preferred route to access the proposed development site. The Port of Entry is assumed to be King George V, Glasgow.

- Upon leaving King George V dock vehicles will travel along Renfrew Road;
- Turn onto the A8, before merging with the M8 at Junction 26;
- Then merge with the A737;
- Exit onto Barrochan Road, onto the A761 travelling westward;
- Turn left onto the B788 at Milton Bridge;
- Continue along B788 (Auchenfoil Road);
- Turn right onto Auchentiber Road; and
- The development site is accessed from Auchentiber Road via a new access track.

It is assumed that the vehicles utilised in the delivery of turbine components will be escorted along the route, and sections of the route can be temporarily closed or restricted if necessary.

The proposed route is illustrated in Figure 13.1 in the Appendix of this document.

It is important to note that the proposed delivery route has been selected through using aerial imagery and mapping, and as a result, may need to be amended at a later date. The final delivery route will be outlined within the Traffic Management Plan composed by the Haulage Company and submitted to the relevant Authorities prior to any works taking place.

13.5 Delivery Vehicles

With the delivery of a single Gamesa G52 turbine and the associated materials required for the construction of the development, a number of vehicular movements will be necessary. The likely specifications of vehicles to be used in conjunction with this project are detailed in the following section. Component delivery schedules will be confirmed in detail a minimum of 5 weeks prior to the date of construction, with the haulage company composing and submitting an agreed Traffic Management Plan.

'Vehicle Movements' is a singular vehicular movement; from an external point, to the development site. The return journey of the vehicle is then considered as an additional movement (*i.e.* A – B= 1 movement, B – A= 1 movement).

TABLE 13.4: VEHICLE INVENTORY FOR DELIVERY OF TURBINE COMPONENTS

Components/ Requirements	Materials	Delivery Specifications	Vehicle Dimensions	Vehicle Movements
Track and Crane Pad	Stone (Type 1 MOT)	769tonnes delivered by 20 tonne Lorries	*6.2m L x 2.5m W x 3.4m H*	80
Foundations	Concrete	170m^3 concrete delivered by 6m^3 wagons	*8.2m L x 3.0m W x 3.8m H*	58
	Rebar	12 tonnes rebar delivered by Flatbed Lorry	*17.5m L x 2.5m W x 2.5m H*	2
Excavation	Excavator	Delivery on Low Loader	*17.5m L x 2.5m W x 3.5m H*	2
		Dump truck	*7.5m L x 2.5m W x 2.9m H*	2
Work and Plant for Foundations	Transporting Workmen to/from site	Transit Vans	Standard	50
	Mobile welfare unit	Flatbed	*17.5m L x 3.0m W x 4.0m H*	2
	Ancillary plant/materials	4 No. 20 tonne Flatbeds	*17.5m L x 2.5m W x 3.0m H*	3
	Storage Container	Flatbed	*17.5m L x 2.5m W x 4.0m H*	2
Electrical Works	Meter Houses/ transformers	20 tonne Lorries	*6.2m L x 2.5m W x 3.4m H*	2
	Electrical Cabling	20 tonne Lorry	*6.2m L x 2.5m W x 3.4m H*	2
	Excavator for Cable Trench	Flatbed	*17.5m L x 2.5m W x 3.5m H*	2
Turbine Erection	330 tonne Crane	Self-propelled	*17.9m L x 3.0m W x 6.2m H*	2
	330 tonne Crane Support Vehicles	Flatbed	*17.5m L x 2.5m W x 2.5m H*	2
	110 tonne Crane	Flatbed	*13.9m L x 3.0m W x 4.0m H*	2
	110 tonne Crane Support Vehicle	Flatbed	*17.5m L x 2.5m W x 2.5m H*	2
	Tower base section	5 axle steering semi low loader	*22m L x 3.15m W x 4.6m H (loaded weight 48 tonnes)*	2

	Tower top section	Steering flat trailer	*31m L x 2.5m W x 4.2m H (loaded weight 45 tonnes)*	2
	Nacelle and Hub	Low Loader	*17.5m L x 2.5m W x 4.0m H (loaded weight 48 tonnes)*	2
	3 Blades in Container	4 axle Blade Trailer	*35m L x 3.26m W x 4.20m H (loaded weight 38 tonnes)*	2

13.6 Additional Information/Mitigation

A Traffic Management Plan will be drawn up by the Haulage Company and agreed with Inverclyde Roads and Transportation Services once planning permission has been passed. Potential management measures to mitigate the impacts of this development could include:

- Arrangements for escort for larger turbine components during delivery (either provided by the Haulage Company or the Police);
- Signage warning other road users of the turbine movements;
- Ground preparation including protection of services;
- Arrangements for road maintenance and cleaning;
- Timing of deliveries outside of peak traffic;
- Arrangements for parking restriction along access route;
- Temporary speed restriction in the vicinity of the site entrance;
- Wheel cleaning/dirt control arrangements at key stages of construction; and
- Provision of temporary signs and traffic control where necessary.

The following mitigation measures are recommended in terms of site operation and maintenance during the construction of the proposed development at Land southwest of Auchentiber Bridge:

- All material delivery lorries (dry materials) should be sheeted to reduce dust, and stop spillage onto public roads;
- Specific training measures should be established to ensure the highest standards are maintained; and
- To prevent construction vehicles from carrying mud and debris onto the carriageway, wheel wash facilities will be established at the site entrance.

13.7 Decommissioning

The decommissioning of the turbine at the end of its life will follow a reversed construction process. Prior to decommissioning, a further traffic assessment would be carried out and traffic

management procedures agreed with the appropriate authorities. The levels of traffic associated with decommissioning are however likely to be lower than those required during construction.

14 DELIVERY AND CONSTRUCTION ACCESS ROUTE

The site will be accessed via the public road network, then by a new access track which will be constructed as an extension from Auchentiber Road to the north, down towards the turbine site within the development field. A detailed transportation assessment will be compiled and submitted to the relevant roads department at least 5 weeks before any deliveries take place.

A desktop study of the route has been done and no upgrades to the existing road network are necessary for it to be negotiated during the delivery of the components. However, should any upgrades be required, VG Energy request that time is allocated for discussions to take place with the relevant Roads Departments, to discuss various options available. As noted, a full Traffic Management Plan will be compiled by the Haulage Company and submitted to the relevant roads departments for approval prior to any works taking place.

It may be necessary to control the traffic using this route when delivering the larger components. The oncoming vehicles will be controlled by appropriately qualified staff within the attendant vehicle travelling with the truck warning on-coming traffic to slow down and stop until the manoeuvre has been completed. All safety measures will be outlined within the Traffic Management Plan.

15 EXISTING INFRASTRUCTURE

Wind farms have the potential to interfere with electro-magnetic signals passing above ground or existing infrastructure below ground. Consultation with relevant telecommunication and utilities providers is a routine part of wind farm development. Consultees will include:

- Civil Aviation Authority (CAA);
- Defence Estates, MoD;
- NATS;
- OFCOM;
- Television and telecommunications providers as appropriate;
- Water, gas and electricity utilities providers.

Information obtained from the consultees will be taken into account and incorporated into the design of the development.

16 GENERAL SAFETY

Construction Projects have a potential to create hazards for the general public and contractors. The greatest hazards occur during the construction, repair works and decommissioning of the turbines but the risks will be minimised by ensuring work complies with the following regulations:

- Health and Safety at Work Act 1974;
- Management of Health & Safety at Work Regulations 1999;
- Work at Height Regulations 2005;
- Lifting Operations & Lifting Equipment Regulations 1998;
- Control of Substances Hazardous to Health Regulations;
- SEPA Regulations.

All work will be planned to be completed within normal working hours, with noise levels limited where possible. A site traffic management plan will ensure works traffic does not endanger the public whilst entering or leaving the site.

Working at height shall be mitigated where possible, but because of the nature of the project, will at times be essential. All working at height will comply with Work at Height Regulations 2005.

All works will be done by suitably trained and competent staff, to established methodologies, which have been risk assessed in advance. During the construction period, public access will be prevented and the site supervisor will ensure that safety is paramount.

The wind turbine being considered for use at Land southwest of Auchentiber Bridge is designed and manufactured to high standards and will withstand the weather extremes which arise in the United Kingdom.

LIST OF FIGURES

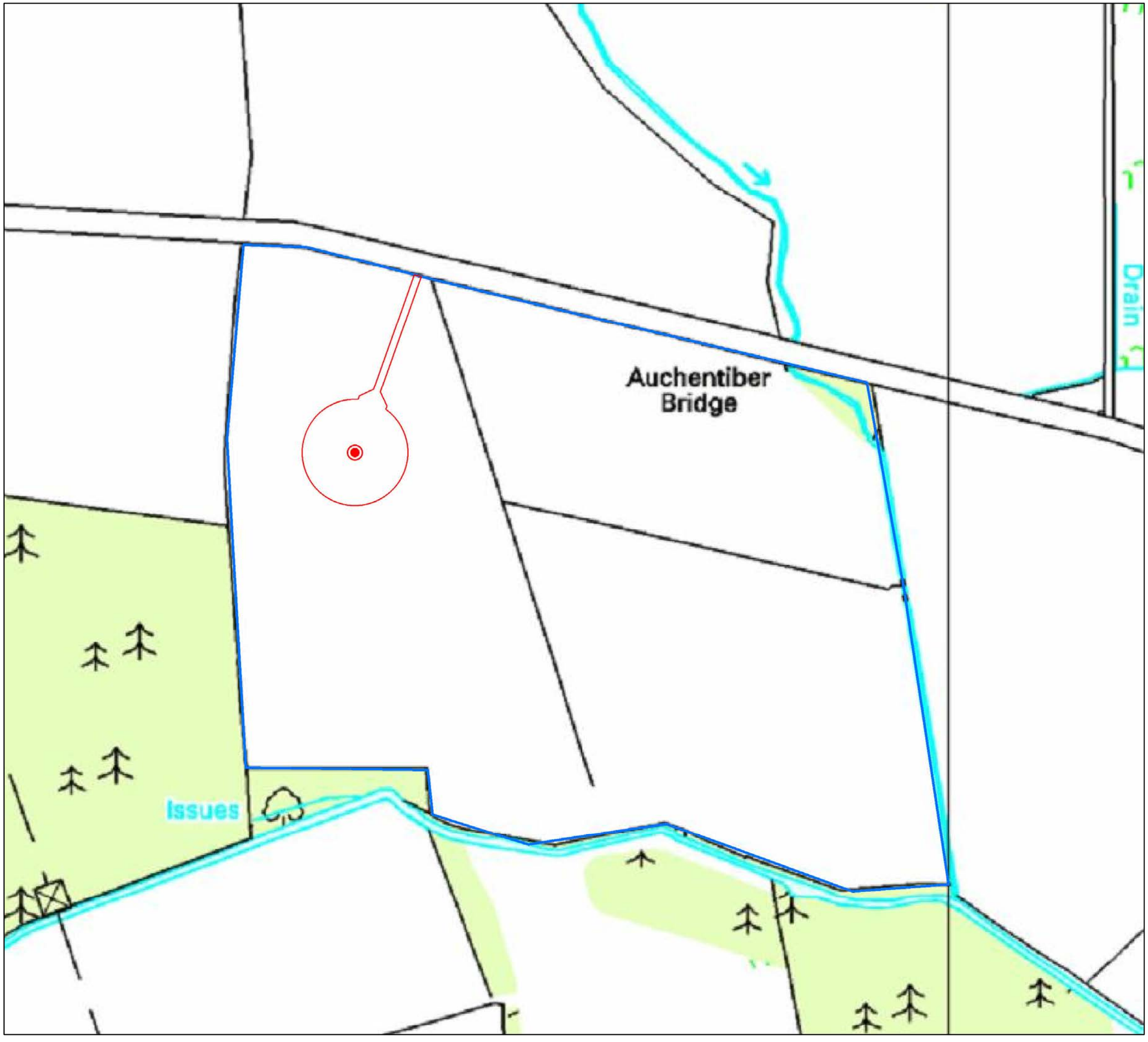


Figure 1.1: Site Map for Proposed Development at Land southwest of Auchentiber Bridge

Legend:

Proposed Turbine Location
E:231595 N:671497

Land Ownership Boundary

Application Site Area

N

0 0.02 0.04 0.08 Kilometers

1:2,500

Site Name: Land southwest of Auchentiber Bridge
Client Name: Mr Dunn
Site Reference: WV1072
Drawing Reference: WV1072/001/B
Date: 19/12/2013
User: B.L

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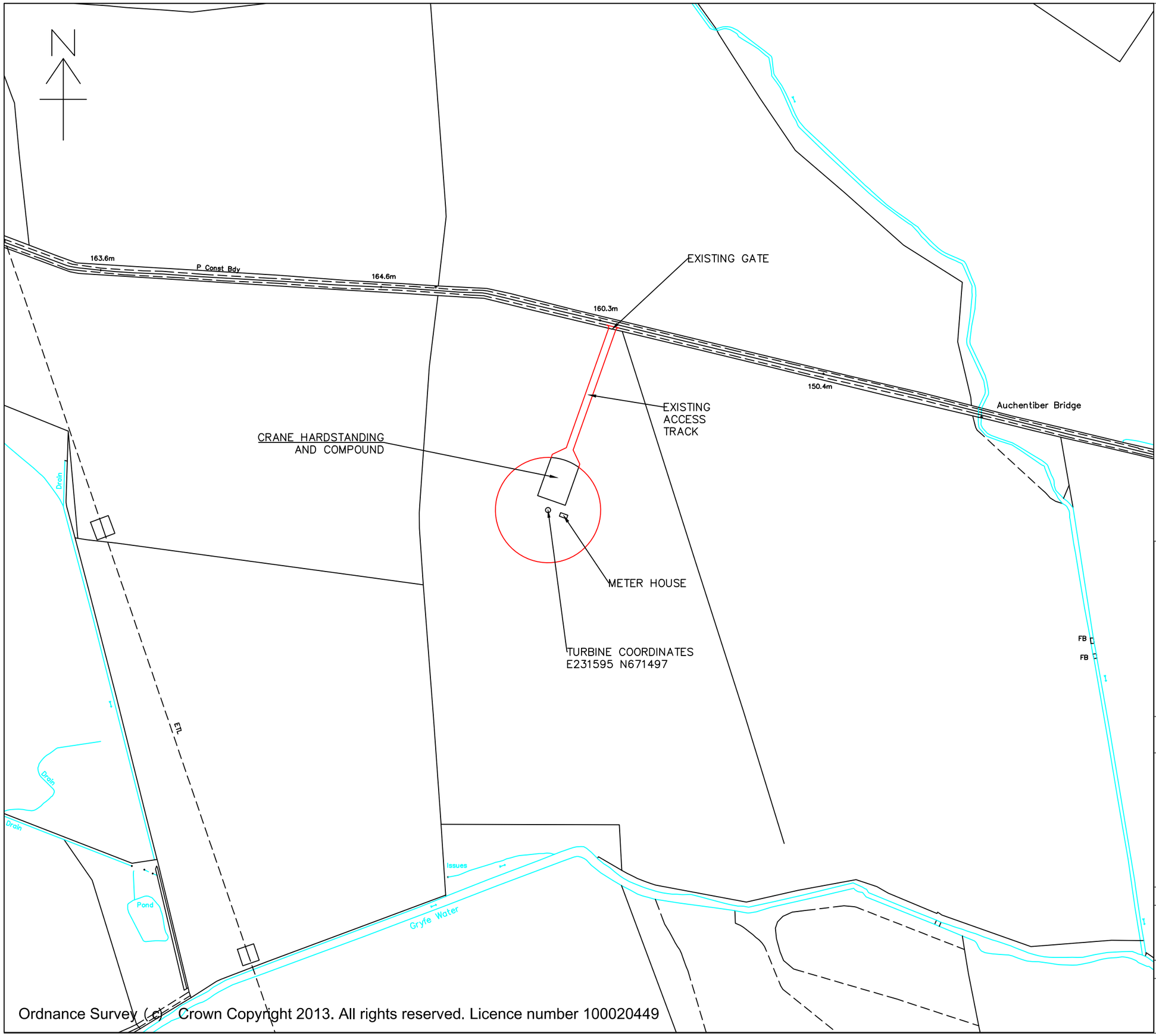

FIGURE 2.2: SITE LAYOUT

TOTAL SITE AREA AMOUNTS TO 4640 SQUARE METRES

TURBINE BLADE TIP HEIGHT TO BE 70 METRES.

TURBINE POSITIONING TO BE A 72 METRES CIRCLE TO ALLOW FOR MINOR REPOSITIONING DUE TO GROUND CONDITIONS, MICRO-SITING ALLOWANCES, ETC.

CRANE HARDSTANDING AND COMPOUND TO BE 20 METRES BY 30 METRES. ACCESS TRACK TO BE 5 METRES WIDE.

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w: www.vgenergy.co.uk

SCALE: 1:2500

0 25 50 100 150 metres

PROPOSED ERECTION OF ONE 70 metre TO TIP GAMESA WIND TURBINE for MR DUNN at LAND SOUTHWEST OF AUCHENTIBER BRIDGE, AUCHENFOYLE, INVERCLYDE, PA13, 4TL.

SITE REFERENCE	DRAWING NUMBER
WV1072	WV1072/038/A
DRAWN BY	**DATE**
CB	12/12/2013

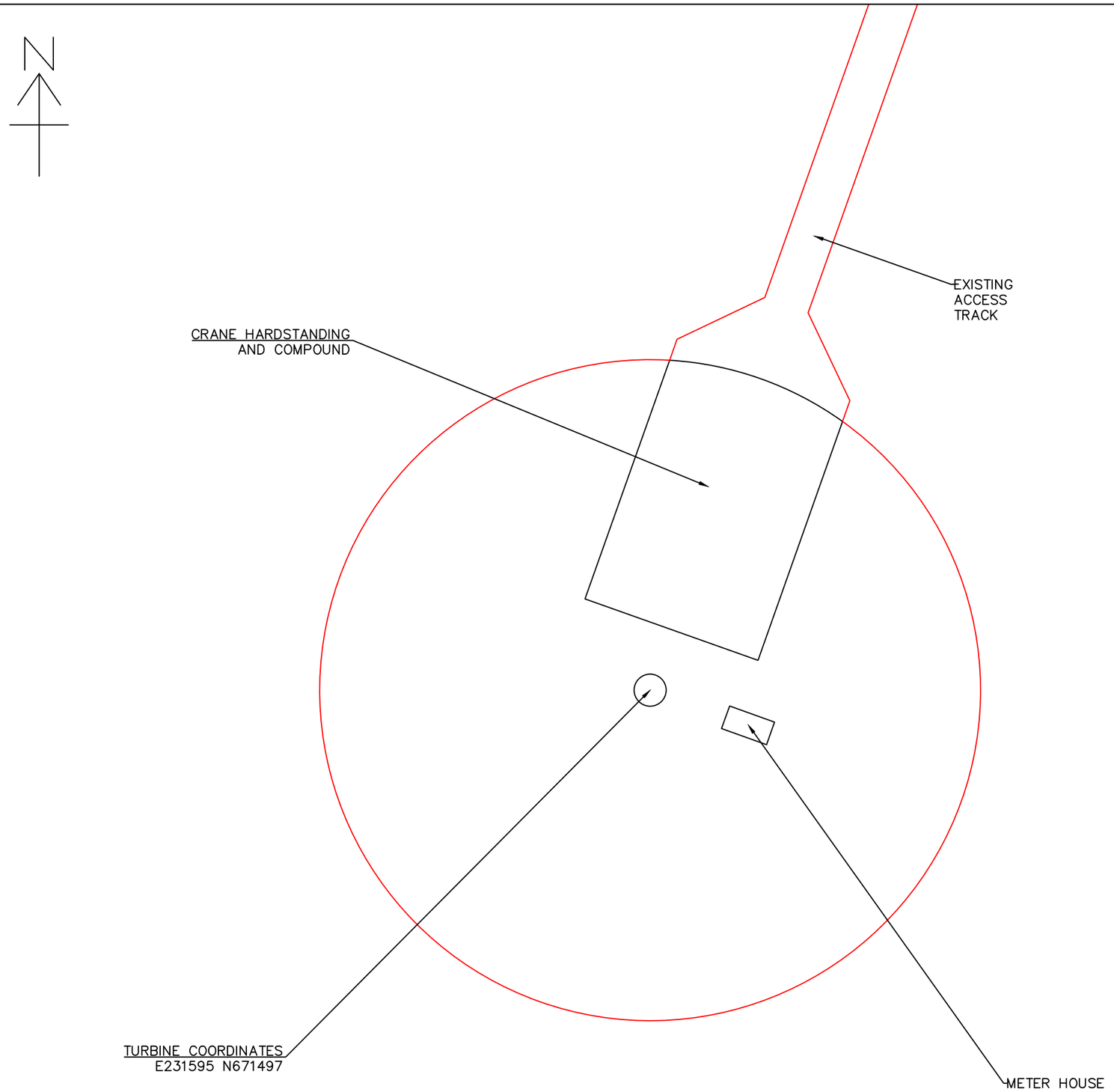

FIGURE 2.3: BLOCK PLAN

TOTAL SITE AREA AMOUNTS TO 4640 SQUARE METRES

TURBINE BLADE TIP HEIGHT TO BE 70 METRES.

TURBINE POSITIONING TO BE A 72 METRES CIRCLE TO ALLOW FOR MINOR REPOSITIONING DUE TO GROUND CONDITIONS, MICRO-SITING ALLOWANCES, ETC.

CRANE HARDSTANDING AND COMPOUND TO BE 20 METRES BY 30 METRES. ACCESS TRACK TO BE 5 METRES WIDE.

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w: www.vgenergy.co.uk

SCALE: 1:500

0 5 10 20 30 metres

PROPOSED ERECTION OF ONE 70 metre TO TIP GAMESA WIND TURBINE for MR DUNN at LAND SOUTHWEST OF AUCHENTIBER BRIDGE, AUCHENFOYLE, INVERCLYDE, PA13, 4TL.

SITE REFERENCE	DRAWING NUMBER
WV1072	WV1072/039/A
DRAWN BY	**DATE**
CB	12/12/2013

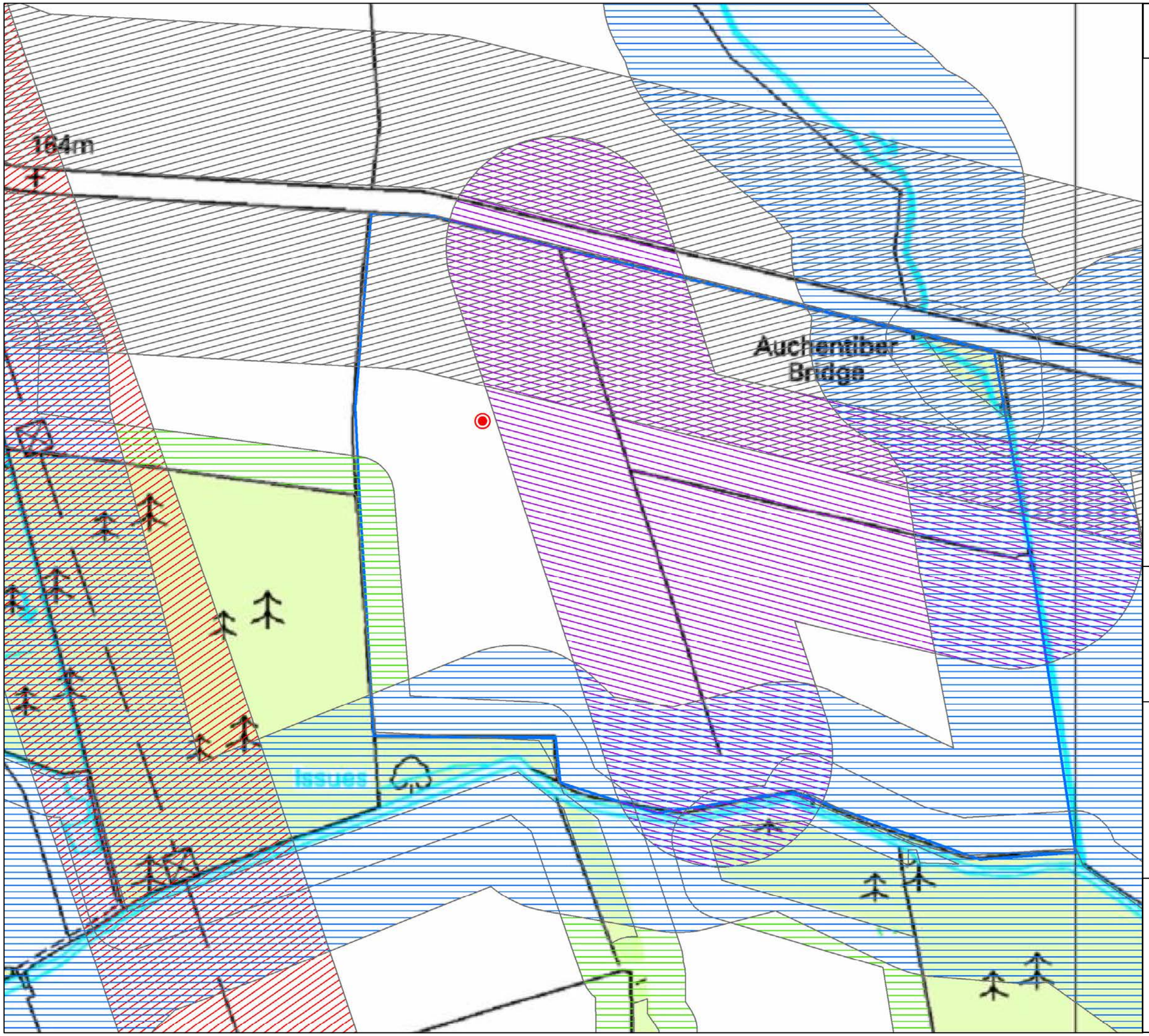

Figure 2.4: Physical Constraints at development site

Legend:

- Proposed Turbine Location E: 231595 N: 671497
- Land Ownership Boundary
- Buffer for Watercourse
- Buffer for Trees
- Buffer for walls
- Buffer for Road
- Buffer for Power Lines

0 0.02 0.04 0.08 Kilometers

1:2,500

N

Site Name: Land southwest of Auchentiber Bridge
Client: Mr Dunn
Site Reference: WV1072
Drawing No: WV1072/005/A
Date: 29/08/2013
User: Bethan.Lewis

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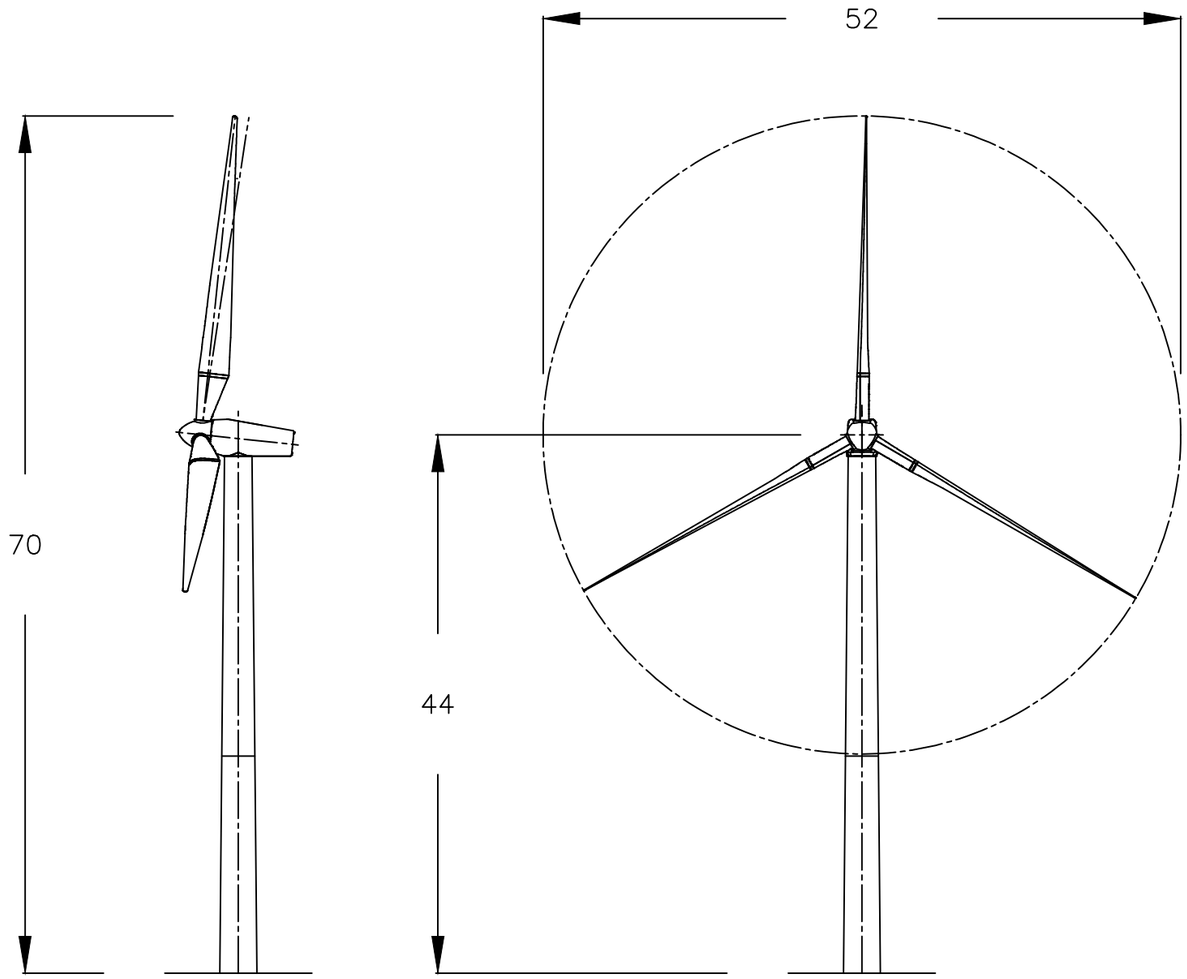
FIGURE 2.5: TURBINE ELEVATION



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SCALE: 1:500

0 10m 20m 30m

GAMESA G52 T44 TURBINE ELEVATION.

SITE REFERENCE	DRAWING NO.
WV1072	WV1072/037/A
DRAWN BY	**DATE**
CB	12/12/2013

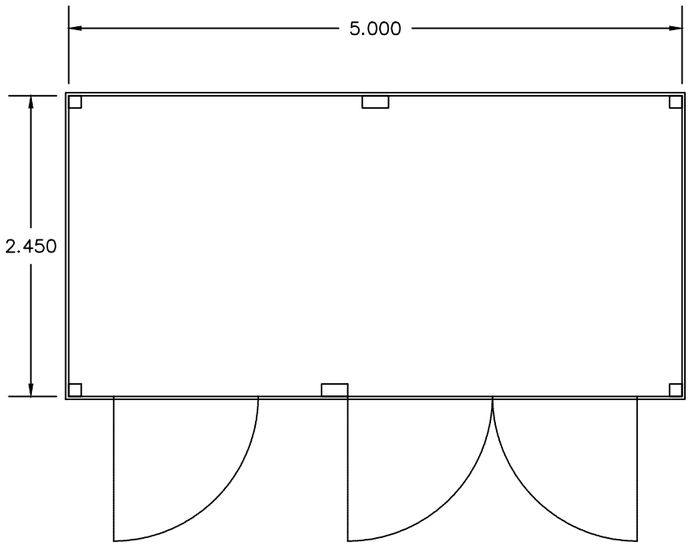
FIGURE 2.6: METER HOUSE

Specifications

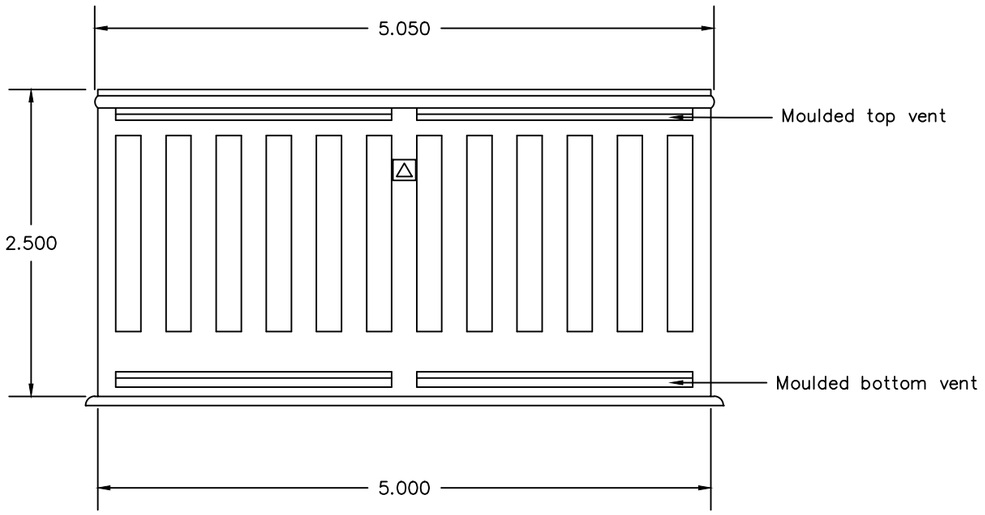
FOUNDATION: Up to 750mm C40 grade concrete plinth on minimum 50mm blinding concrete on undisturbed inorganic strata.

WALLS: Walls to be 100mm thick concrete blockwork with an external finish of wet dash render, painted to the satisfaction of the local authority.

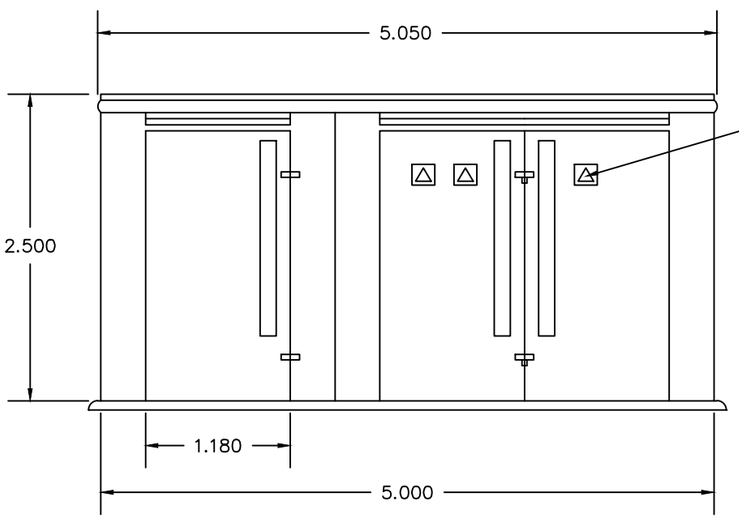
ROOF: Proprietory profiled metal sheeting (coloured green).



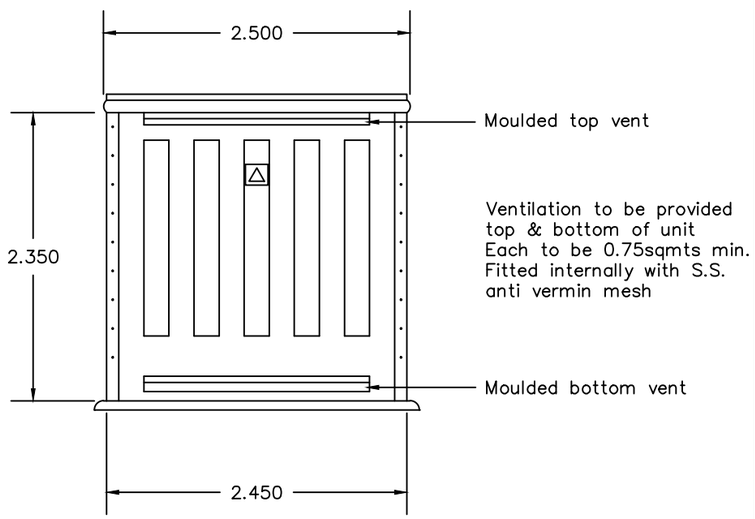
Plan



Rear Elevation



Front Elevation



Side Elevation

Opposite Side Identical

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SCALE: 1:50

0 0.5 1 2 3 metres

TURBINE METER HOUSE SCHEMATIC

SITE REFERENCE	DRAWING NUMBER
WV1072	WV1072/036/A
DRAWN BY	**DATE**
CB	12/12/2013

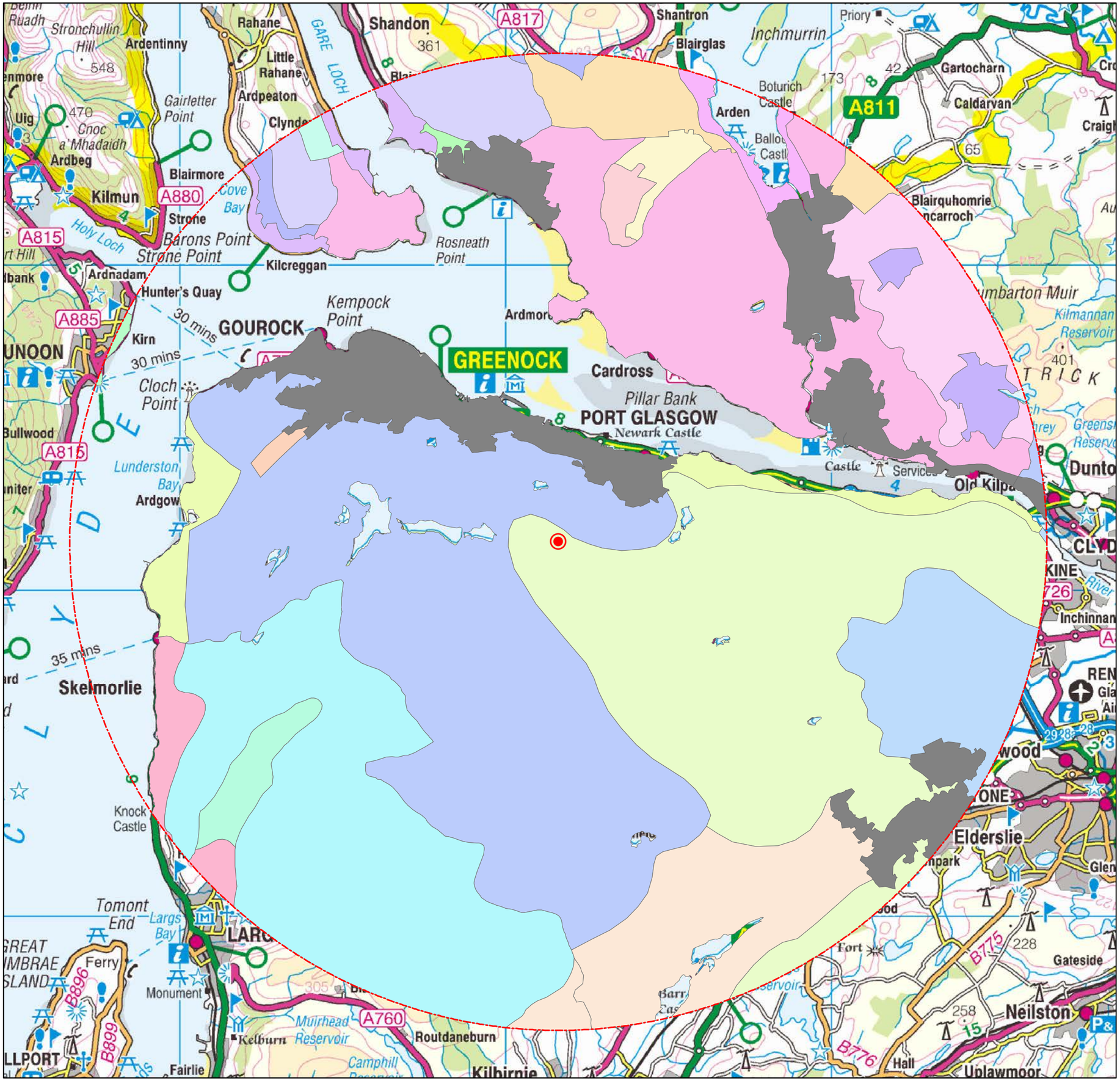

Figure 6.1: Landscape Character Types within 15 km of Land southwest of Auchentiber Bridge

Legend:

- Proposed G52 Turbine E: 231595, N: 671497
- 15 km Study Area
- Broad Valley Lowland
- Farmed Moorland Hills
- Floodplain
- Forested Glen
- Forested Moorland Hills
- Forested Parallel Ridges
- Intimate Pastoral Valleys
- Lowland Loch and Shore
- Mountain Glens
- Open Glen Side
- Open Parallel Ridges
- Open Upland Hills
- Raised Beach
- Raised Beach Coast
- River Valley Farmland
- Rolling Farmland
- Rugged Moorland Hills
- Rugged Moorland Hills and Valleys
- Rugged Upland Farmland
- Settled Loch Shore
- Steep Ridgeland and Mountains
- Upland River Valleys
- Urban
- Wooded Glen

0 1 2 4 Kilometers

1:115,000

N

Site: Land southwest of Auchentiber Bridge
Client: Mr Dunn
Site Reference: WV1072
Drawing No: WV1072/009/A
Date: 07/11/2013
Drawn by: Liam.Brown

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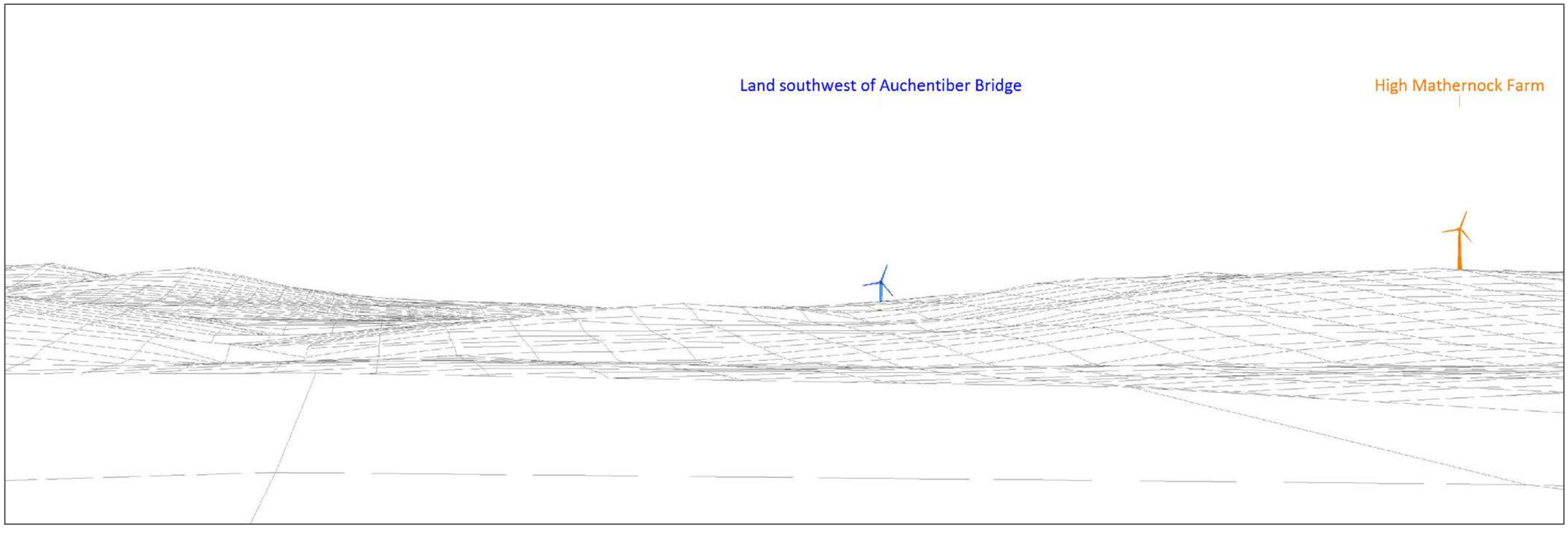

Figure 6.2: Junction of A761 Port Glasgow Road and Auchentiber Road (facing northwest)

Recommended viewing distance when viewed with both eyes: 500mm

Distance to turbine: 3.2 km
Camera Height: 1.75m
Focal Length: 50mm

Camera: Fujifilm HS20 EXR
Date Photograph Taken: 07/06/2013
Time Photograph Taken: 10:10

Proposed Development
Approved/Installed Development
Pending Development

Figure 6.3: Junction of A761 Port Glasgow Road and Auchenbothie Road (facing northwest)

Recommended viewing distance when viewed with both eyes: 500mm

Distance to turbine: 3.2 km
Camera Height: 1.75m
Focal Length: 50mm

Camera: Fujifilm HS20 EXR
Date Photograph Taken: 07/06/2013
Time Photograph Taken: 10:10

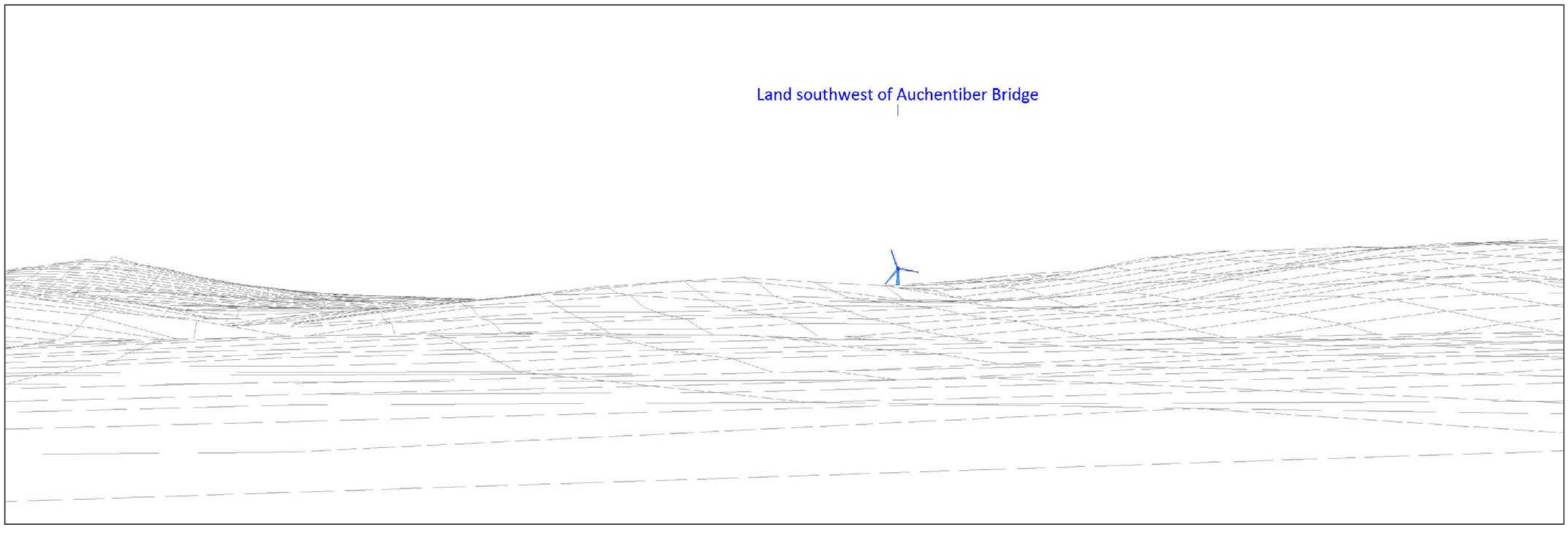

Figure 6.4:
Auchenbothie Mains (facing northwest)

Recommended viewing distance when viewed with both eyes: 500mm

Distance to turbine: 2.9 km
Camera Height: 1.75m
Focal Length: 50mm

Camera: Fujifilm HS20 EXR
Date Photograph Taken: 02/04/2013
Time Photograph Taken: 12:20

Proposed Development
Approved/Installed Development
Pending Development

Figure 6.5:
Auchenbothie Mains (facing northwest)

Recommended viewing distance when viewed with both eyes: 500mm

Distance to turbine: 2.9 km
Camera Height: 1.75m
Focal Length: 50mm

Camera: Fujifilm HS20 EXR
Date Photograph Taken: 02/04/2013
Time Photograph Taken: 12:20

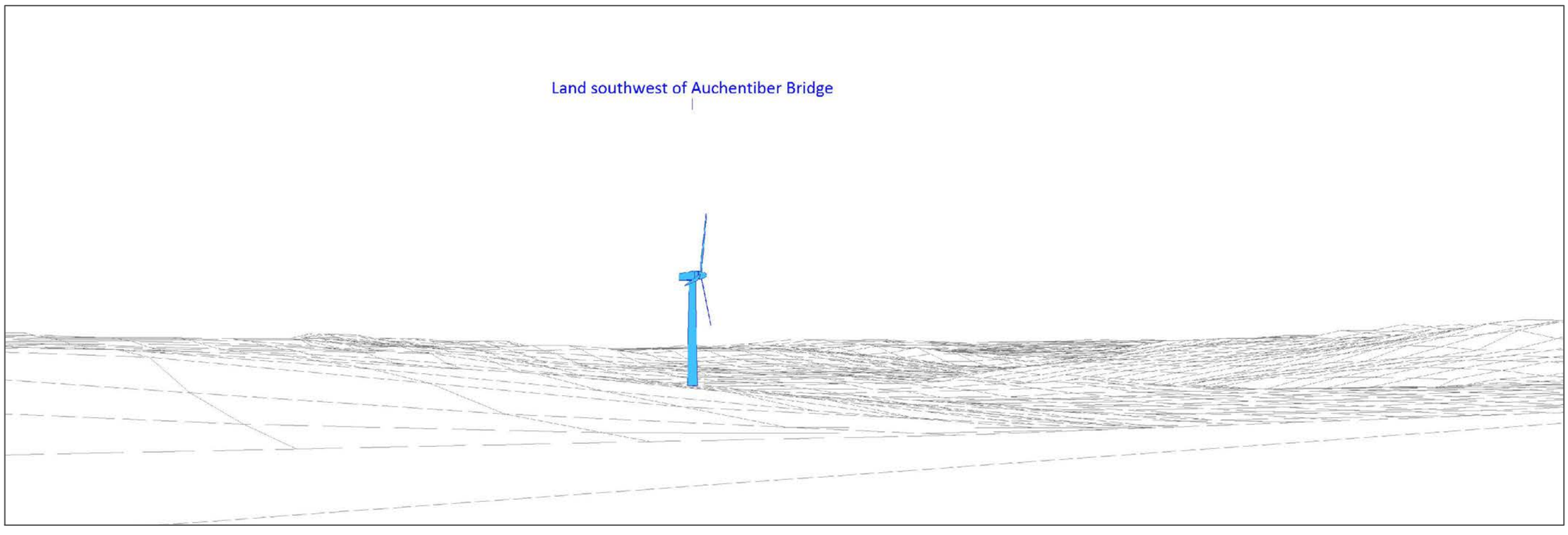

Figure 6.6: Junction of B788 Auchenfoil Road and Auchentiber Road (facing southeast)

Recommended viewing distance when viewed with both eyes: 500mm

Distance to turbine: 0.9 km
Camera Height: 1.75m
Focal Length: 50mm

Camera: Fujifilm HS20 EXR
Date Photograph Taken: 02/04/2013
Time Photograph Taken: 13:20

Proposed Development
Approved/Installed Development
Pending Development

Figure 6.7: Junction of B788 Auchenfoil Road and Auchentiber Road (facing southeast)

Recommended viewing distance when viewed with both eyes: 500mm

Distance to turbine: 0.9 km
Camera Height: 1.75m
Focal Length: 50mm
Camera: Fujifilm HS20 EXR
Date Photograph Taken: 02/04/2013
Time Photograph Taken: 13:20

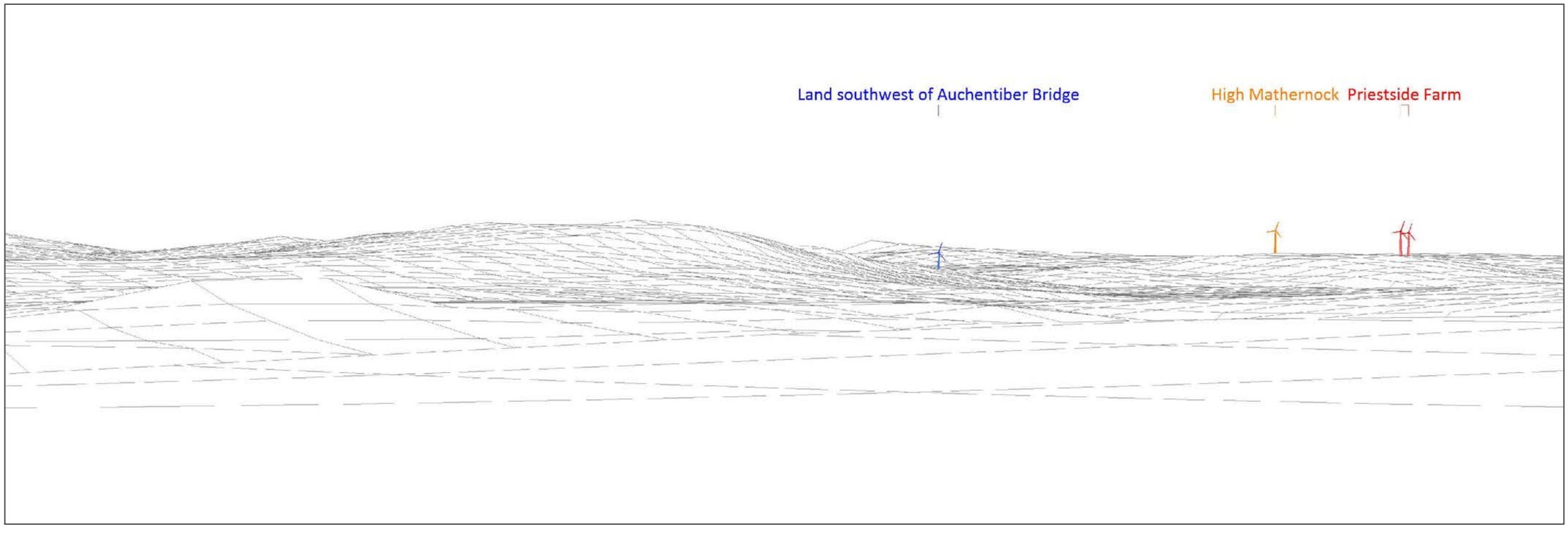

Figure 6.8: Junction of B788 Auchenfoil Road and A761 \bridge of Weir Road (facing northwest)

Recommended viewing distance when viewed with both eyes: 500mm

Distance to turbine: 5.6 km
Camera Height: 1.75m
Focal Length: 50mm

Camera: Fujifilm HS20 EXR
Date Photograph Taken: 07/06/2013
Time Photograph Taken: 10:35

Proposed Development
Approved/Installed Development
Pending Development

Figure 6.9: Junctionof B788 Auchenfoil Road and A761 Bridge of Weir Road (facing northwest)

Recommended viewing distance when viewed with both eyes: 500mm

Distance to turbine: 5.6 km
Camera Height: 1.75m
Focal Length: 50mm

Camera: Fujifilm HS20 EXR
Date Photograph Taken: 07/06/2013
Time Photograph Taken: 10:35

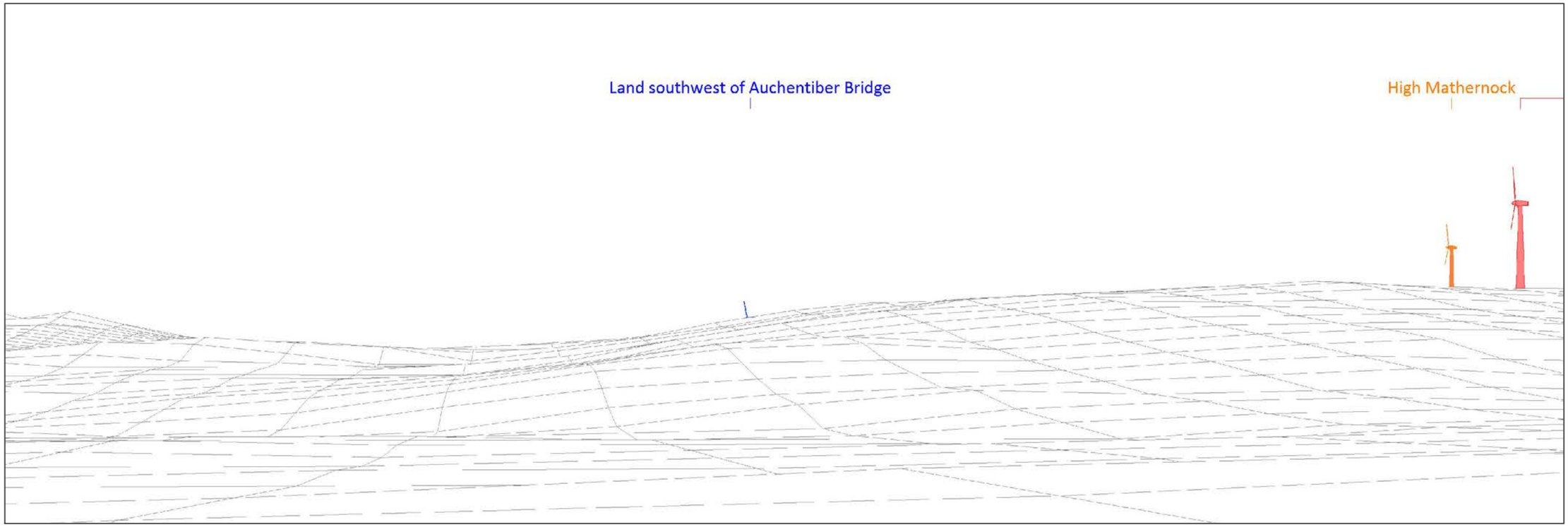

Figure 6.10:
Cycle Route 75 (facing west)

Recommended viewing distance when viewed with both eyes: 500mm

Distance to turbine: 2.6 km
Camera Height: 1.75m
Focal Length: 50mm

Camera: Fujifilm HS20 EXR
Date Photograph Taken: 07/06/2013
Time Photograph Taken: 11:10

Proposed Development
Approved/Installed Development
Pending Development

Figure 6.11:
Cycle Route 75 (facing west)

Recommended viewing distance when viewed with both eyes: 500mm

Distance to turbine: 2.6 km
Camera Height: 1.75m
Focal Length: 50mm

Camera: Fujifilm HS20 EXR
Date Photograph Taken: 07/06/2013
Time Photograph Taken: 11:10

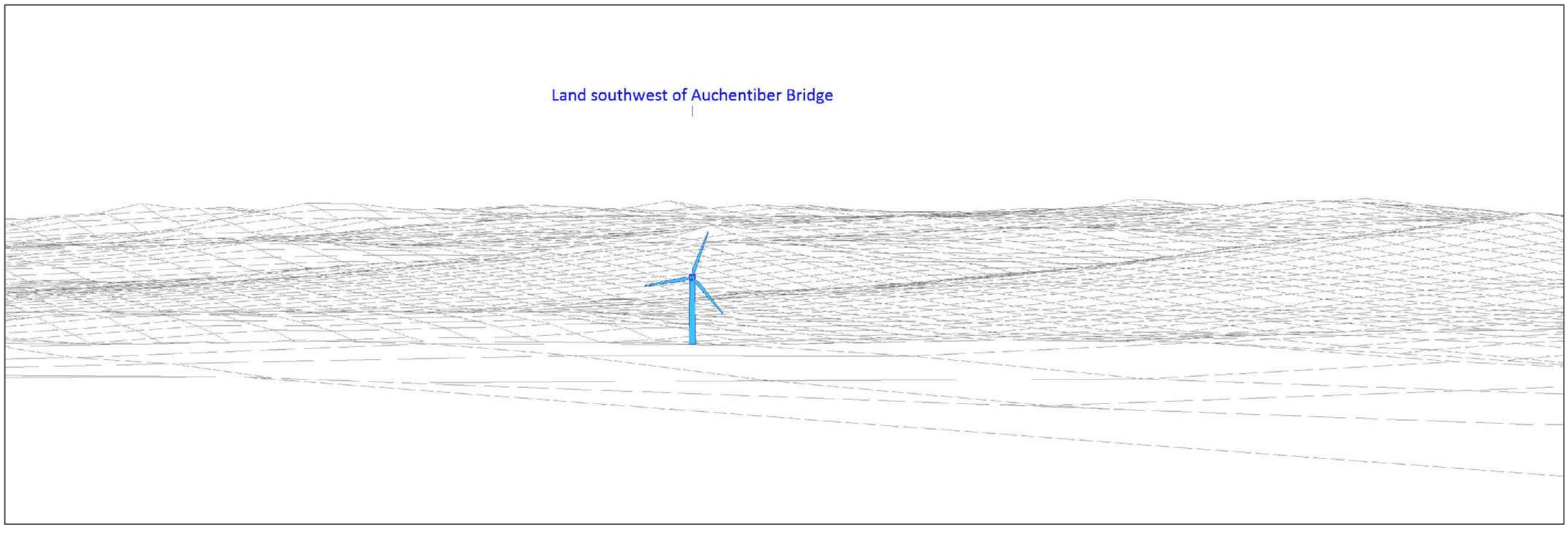

Figure 6.12: Port Glasgow Golf Course, Devol Road Uplands (facing southwest

Recommended viewing distance when viewed with both eyes: 500mm

Distance to turbine: 1.3 km
Camera Height: 1.75m
Focal Length: 50mm

Camera: Fujifilm HS20 EXR
Date Photograph Taken: 02/04/2013
Time Photograph Taken: 11:10

Proposed Development
Approved/Installed Development
Pending Development

Figure 6.13: Port Glasgow Golf Course,
Devol Road Uplands (facing southwest)

Recommended viewing distance when viewed with both eyes: 500mm

Distance to turbine: 1.3 km
Camera Height: 1.75m
Focal Length: 50mm

Camera: Fujifilm HS20 EXR
Date Photograph Taken: 02/04/2013
Time Photograph Taken: 11:10

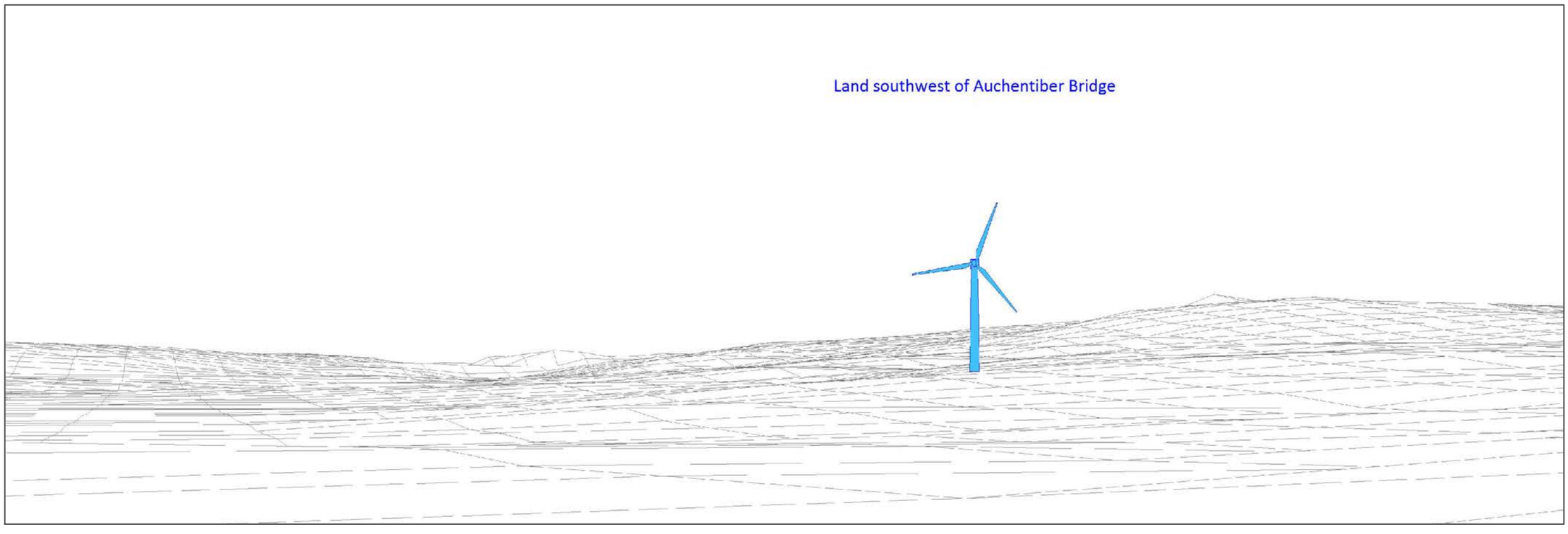

Figure 6.14:
High Mathernock Farm (facing west)

Recommended viewing distance when viewed with both eyes: 500mm

Distance to turbine: 1.0 km
Camera Height: 1.75m
Focal Length: 50mm

Camera: Fujifilm HS20 EXR
Date Photograph Taken: 05/03/2013
Time Photograph Taken: 13:26

Proposed Development
Approved/Installed Development
Pending Development

Figure 6.15:
High Mathernock Farm (facing west)

Recommended viewing distance when viewed with both eyes: 500mm

Distance to turbine: 1.0 km
Camera Height: 1.75m
Focal Length: 50mm

Camera: Fujifilm HS20 EXR
Date Photograph Taken: 05/03/2013
Time Photograph Taken: 13:26

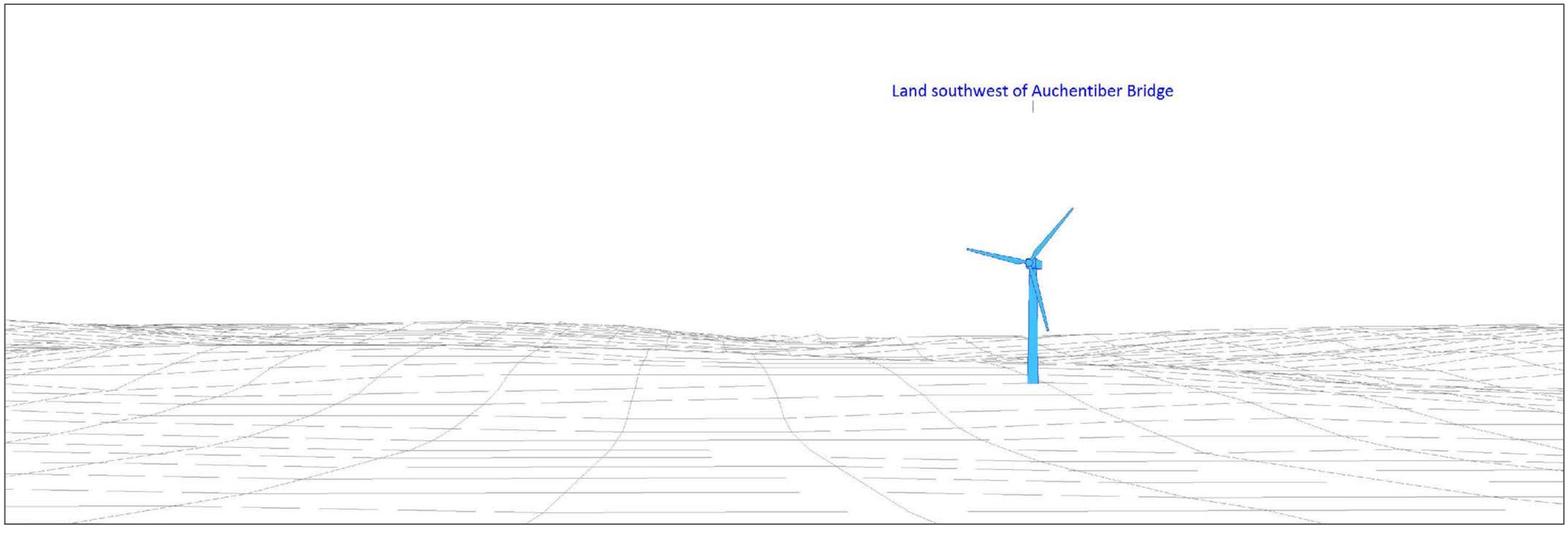

Figure 6.16: Access Road to Horsecraigs at The Haven (facing north)

Recommended viewing distance when viewed with both eyes: 500mm

Distance to turbine: 0.8 km
Camera Height: 1.75m
Focal Length: 50mm

Camera: Fujifilm HS20 EXR
Date Photograph Taken: 02/04/2013
Time Photograph Taken: 13:10

Proposed Development
Approved/Installed Development
Pending Development

Figure 6.17: Access Road to Horsecraigs at the Haven (facing north)

Recommended viewing distance when viewed with both eyes: 500mm

Distance to turbine: 0.8 km
Camera Height: 1.75m
Focal Length: 50mm

Camera: Fujifilm HS20 EXR
Date Photograph Taken: 02/04/2013
Time Photograph Taken: 13:10

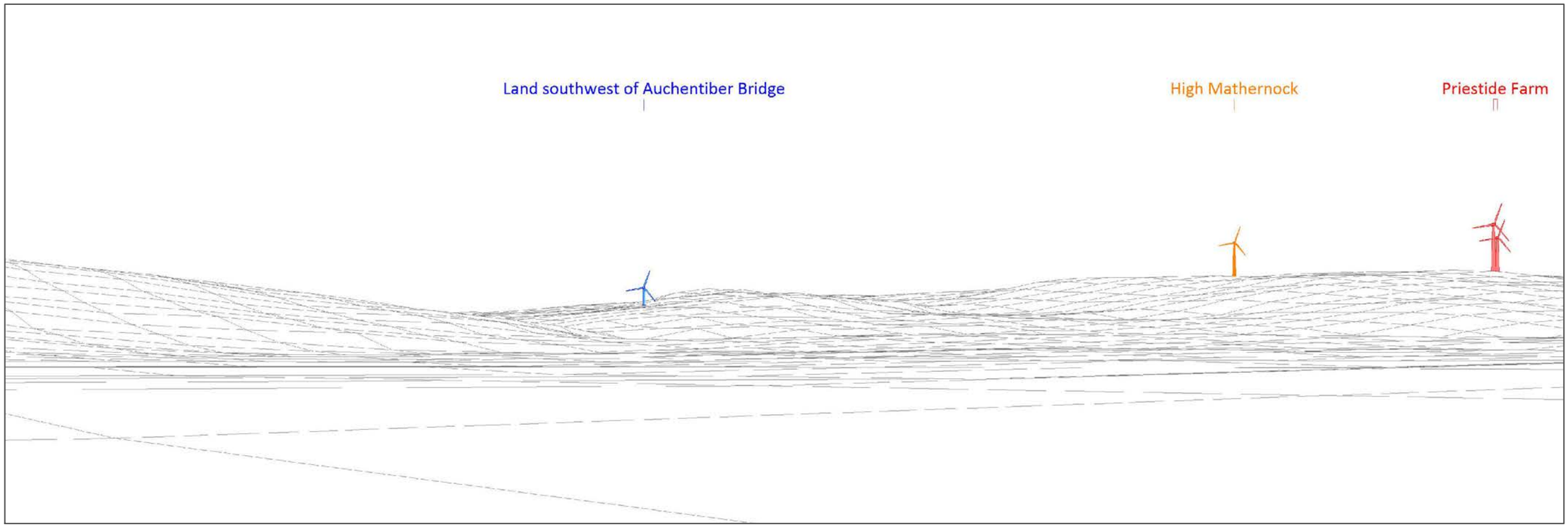

Figure 6.18: Knockbuckle Road, northwest of Kilmacolm (facing northwest)

Recommended viewing distance when viewed with both eyes: 500mm

Distance to turbine: 3.2 km
Camera Height: 1.75m
Focal Length: 50mm

Camera: Fujifilm HS20 EXR
Date Photograph Taken: 02/04/2013
Time Photograph Taken: 12:55

Proposed Development
Approved/Installed Development
Pending Development

Figure 6.19: Knockbuckle Road, northwest of Kilmacolm (facing northwest)

Recommended viewing distance when viewed with both eyes: 500mm

Distance to turbine: 3.2 km
Camera Height: 1.75m
Focal Length: 50mm

Camera: Fujifilm HS20 EXR
Date Photograph Taken: 02/04/2013
Time Photograph Taken: 12:55

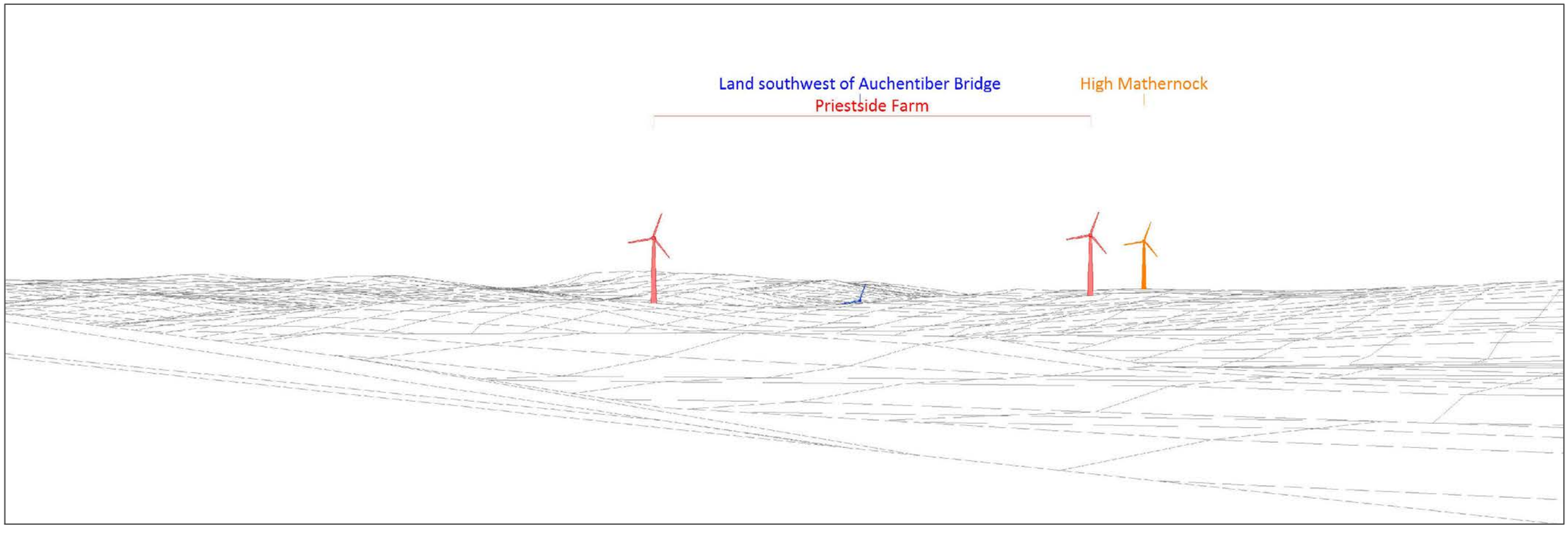

Figure 6.20:
Port Glasgow High School (facing southwest)

Recommended viewing distance when viewed with both eyes: 500mm

Distance to turbine: 3.2 km
Camera Height: 1.75m
Focal Length: 50mm

Camera: Fujifilm HS20 EXR
Date Photograph Taken: 07/06/2013
Time Photograph Taken: 10:55

Proposed Development
Approved/Installed Development
Pending Development

Figure 6.21:
Port Glasgow High School (facing southwest)

Recommended viewing distance when viewed with both eyes: 500mm

Distance to turbine: 3.2 km
Camera Height: 1.75m
Focal Length: 50mm

Camera: Fujifilm HS20 EXR
Date Photograph Taken: 07/06/2013
Time Photograph Taken: 10:55

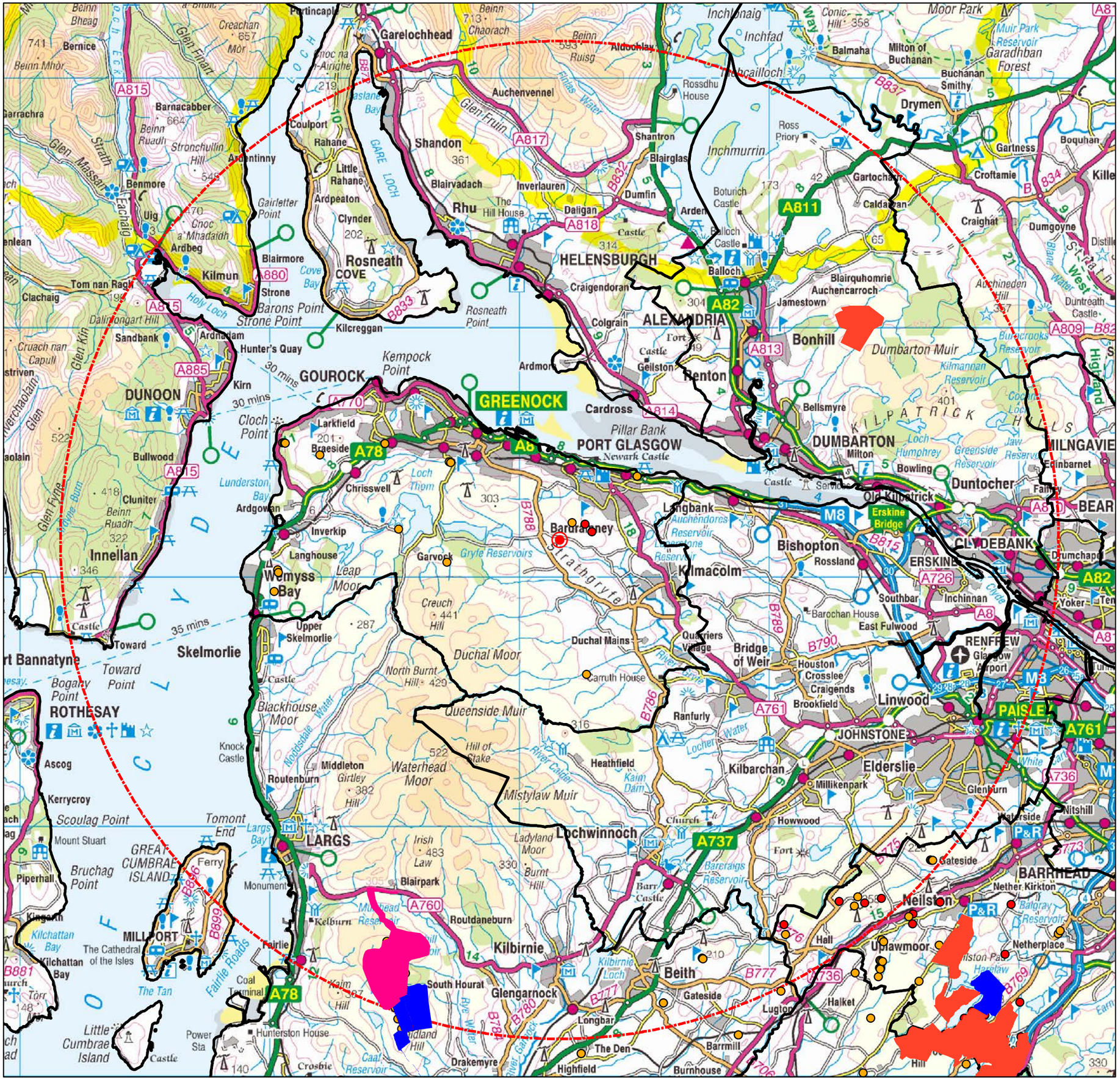

Figure 6.22: Wind Developments within 20 km Study Area

Legend:

- Proposed G52 Turbine: E: 231595, N: 671497
- 20 km Study Area
- Local Authority Boundary
- Application
- Approved/ Installed

Windfarm Proposals

- Application
- Approved
- Installed

0 1.25 2.5 5 Kilometers

1:150,000

N

Site Name: Land southwest of Auchentiber Bridge
Client: Mr Dunn
Site Reference: WV1072
Drawing No: WV1072/030/A
Date: 08/11/2013
Drawn by: Liam.Brown

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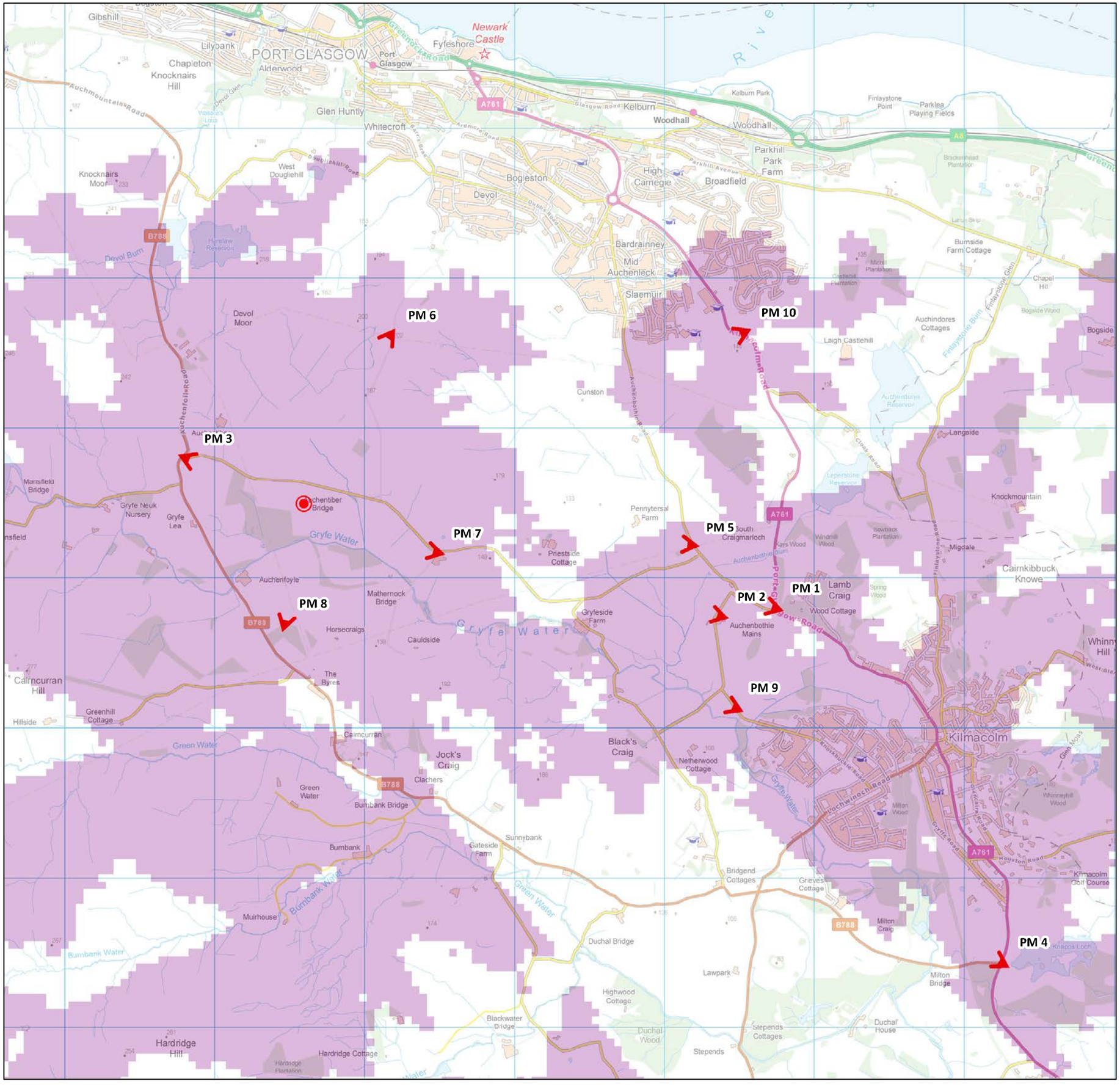

Figure 6.23: Photomontage Viewpoint Locations

Legend:

Proposed G52 Turbine:
E: 231595, N: 671497

ZTV Coverage to Blade Tip

Photomontage Viewpoint

PM 1 - Junction of A761 & Auchenbothie Road
PM 2 - Auchenbothie Mains
PM 3 - Junction of B788 & Auchentiber Road
PM 4 - Junction of B788 & A761
PM 5 - Cycle Route 75
PM 6 - Port Glasgow Golf Club
PM 7 - High Mathernock Farm
PM 8 - Access Road to Horsecraigs, The Haven
PM 9 - Knockbuckle Road, NW of Kilmacolm
PM 10 - Port Glasgow High School

0 0.25 0.5 1 Kilometers

1:25,000

N

Site Name: Land southwest of Auchentiber Bridge
Client: Mr Dunn
Site Reference: WV1072
Drawing No: WV1072/031/A
Date: 07/11/2013
Drawn by: Liam.Brown

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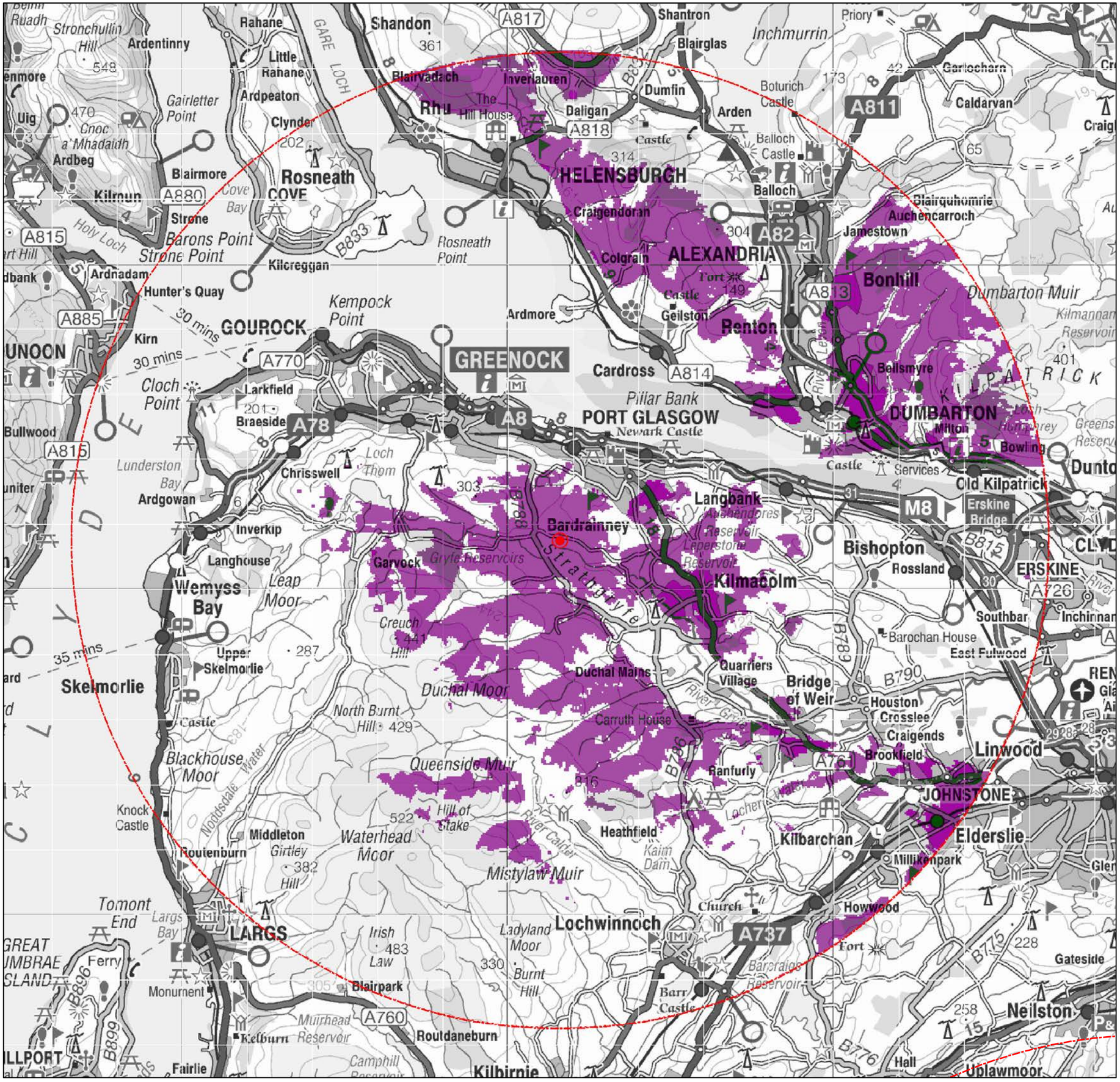

Figure 6.24: Land southwest of Auchentiber Bridge - ZTV Coverage to 15 km

Legend:

- Proposed G52 Turbine: E: 231595, N: 671497
- 15 km Study Area
- ZTV Coverage to Blade Tip

0 1 2 4 Kilometers

1:115,000

N

Site Name: Land southwest of Auchentiber Bridge
Client: Mr Dunn
Site Reference: WV1072
Drawing No: WV1072/032/A
Date: 08/11/2013
Drawn by: Liam.Brown

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Figure 6.25: Land southwest of Auchentiber Bridge - ZTV Coverage to 30 km

Legend:

- Proposed G52 Turbine: E: 231595, N: 671497
- 30 km Area of Search
- ZTV Coverage to Blade Tip

0 2 4 8 Kilometers

1:225,000

N

Site Name: Land southwest of Auchentiber Bridge
Client: Mr Dunn
Site Reference: WV1072
Drawing No: WV1072/033/A
Date: 12/11/2013
Drawn by: Liam.Brown

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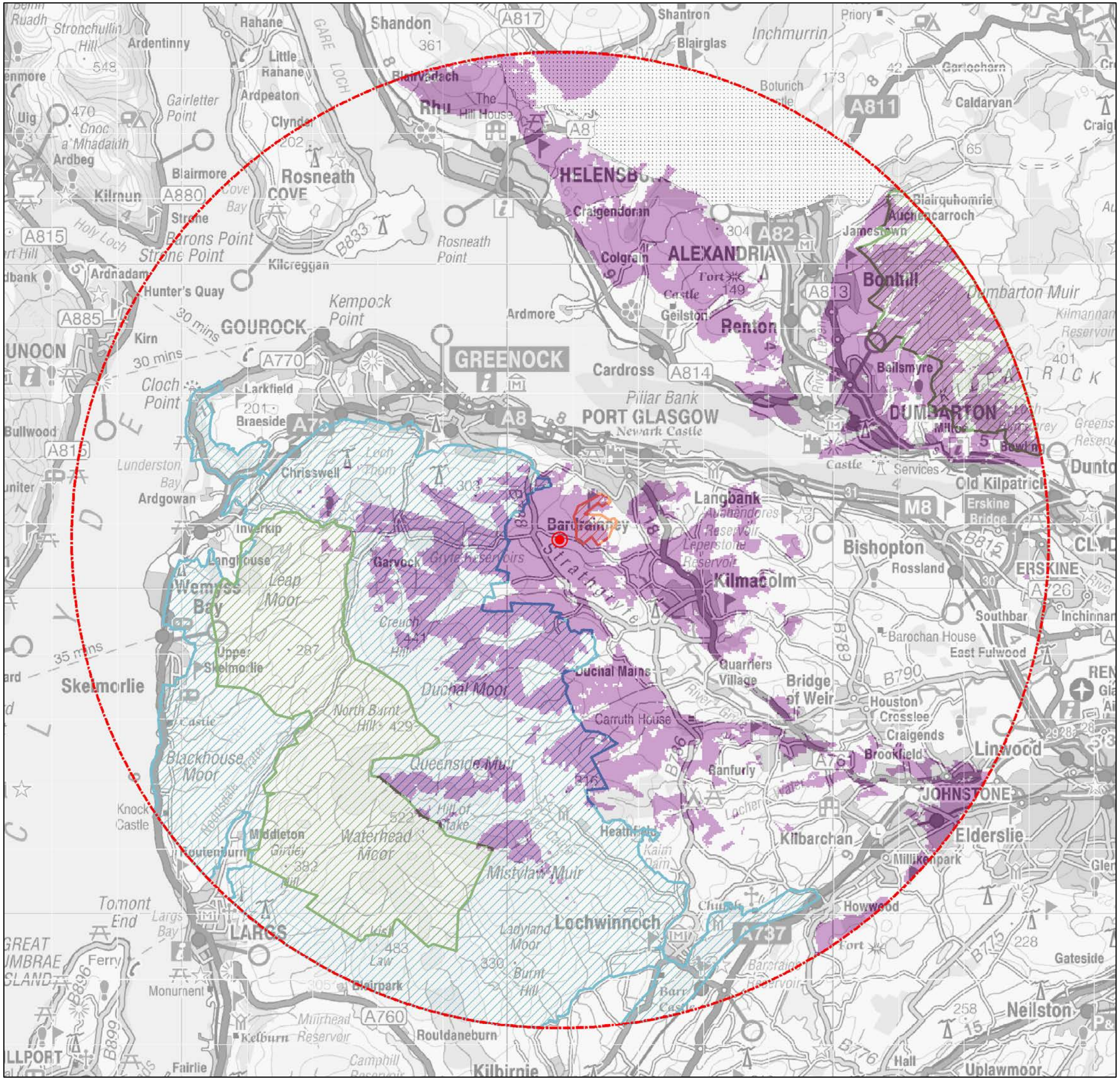

Figure 6.26: Landscape Designations within 15 km - Land southwest of Auchentiber Bridge

Legend:

- Proposed G52 Turbine: E: 231595, N: 671497
- 15 km Study Area
- ZTV Coverage to Blade Tip
- Clyde Muirshiel Regional Park
- Devol Road Upland S.I.N.C
- Area of Great Landscape Value
- Loch Lomond and the Trossachs National Park

0 1 2 4 Kilometers

N

1:115,000

Site Name: Land southwest of Auchentiber Bridge
Client: Mr Dunn
Site Reference: WV1072
Drawing No: WV1072/034/A
Date: 11/11/2013
Drawn by: Liam.Brown

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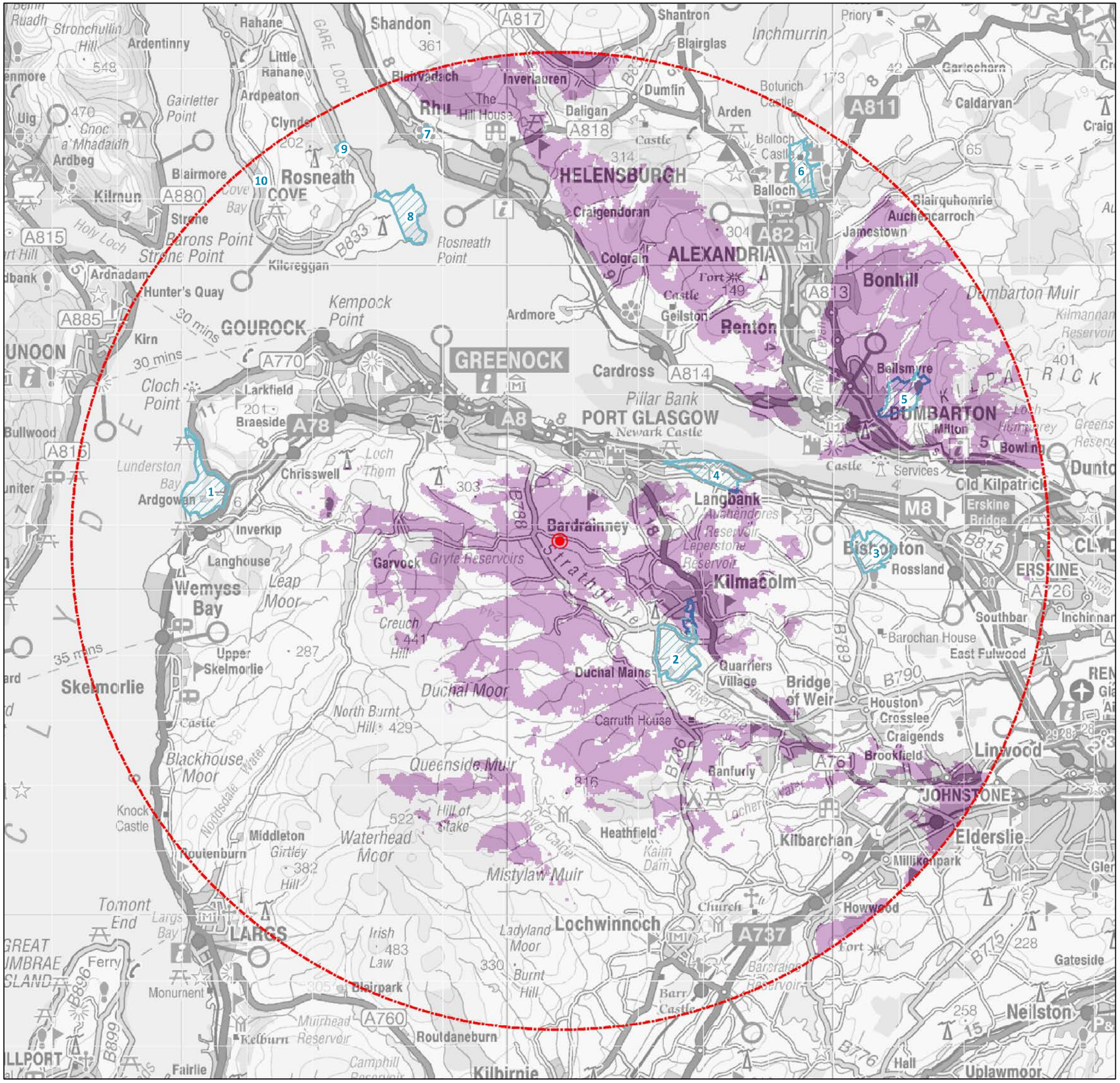

Figure 6.27: Gardens and Designed Landscapes within 15 km - Land southwest of Auchentiber Bridge

Legend:

- Proposed G52 Turbine: E: 231595, N: 671497
- ZTV Coverage to Blade Tip
- Gardens and Designed Landscapes

1	Ardgowan
2	Duchal House
3	Formakin
4	Finlaystone House
5	Overtoun House
6	Balloch Castle
7	Glenarn
8	Rosneath
9	Gareloch House
10	Linn Botanic Garden

0 1 2 4 Kilometers

1:115,000

N

Site Name: Land southwest of Auchentiber Bridge
Client: Mr Dunn
Site Reference: WV1072
Drawing No: WV1072/035/A
Date: 11/11/2013
Drawn by: Liam.Brown

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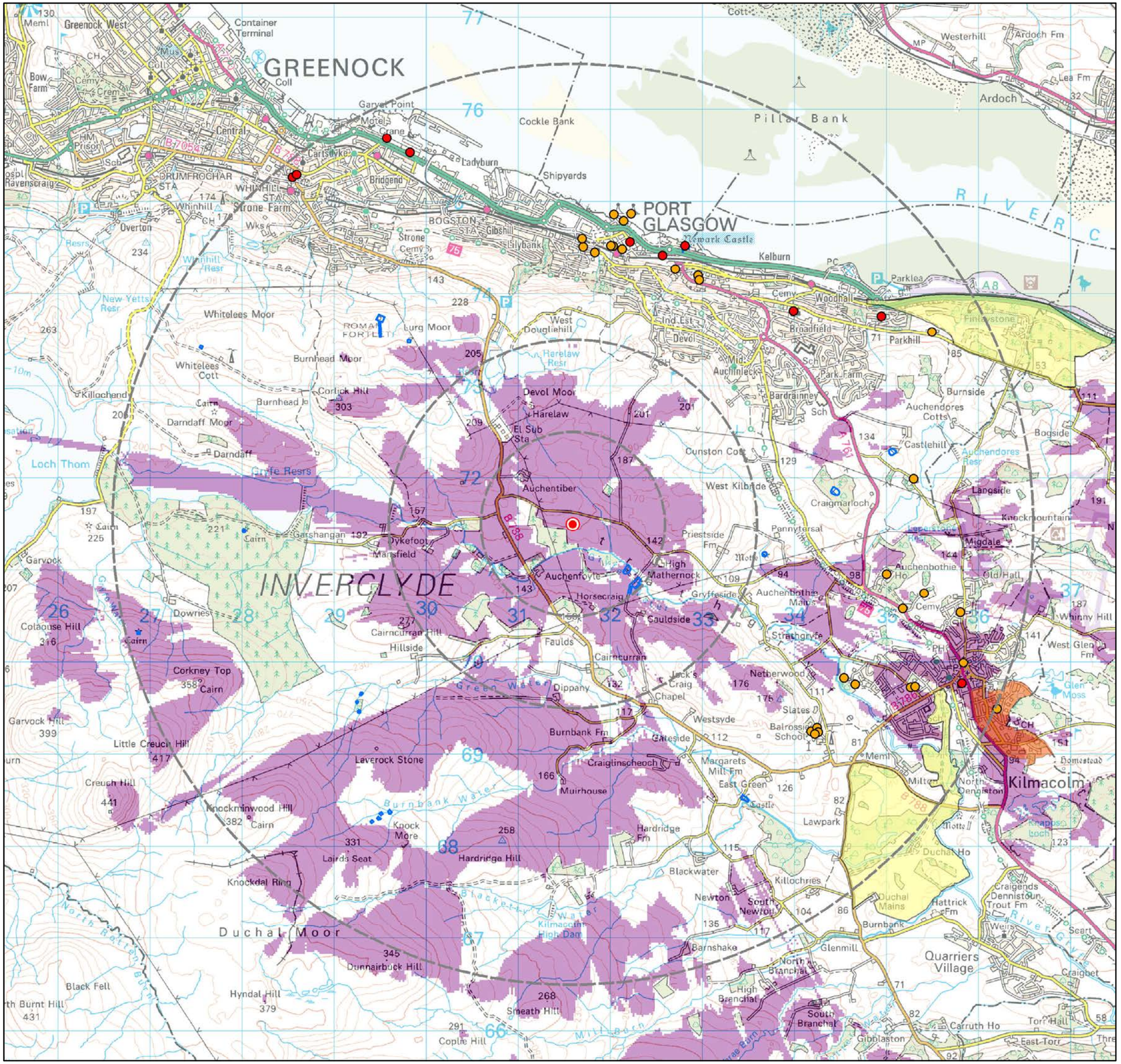

Figure 7.1: Historic Environment Map to 5km of Development Site

Legend:

- Proposed Turbine Location E:231595 N:671497
- 1km, 2km & 5km Radius
- Scheduled Ancient Monument
- Category A Listed Building
- Category B Listed Building
- Gardens and Designed Landscapes
- Conservation Area
- Zone of Theoretical Visibilty (to turbine hub)

0 0.45 0.9 1.8 Kilometers

1:40,000

N

Site Name: Land southwest of Auchentiber Bridge
Client: Mr Dunn
Site Reference: WV1072
Drawing No: WV1072/002/A
Date: 05/09/2013
Drawn by: B.L

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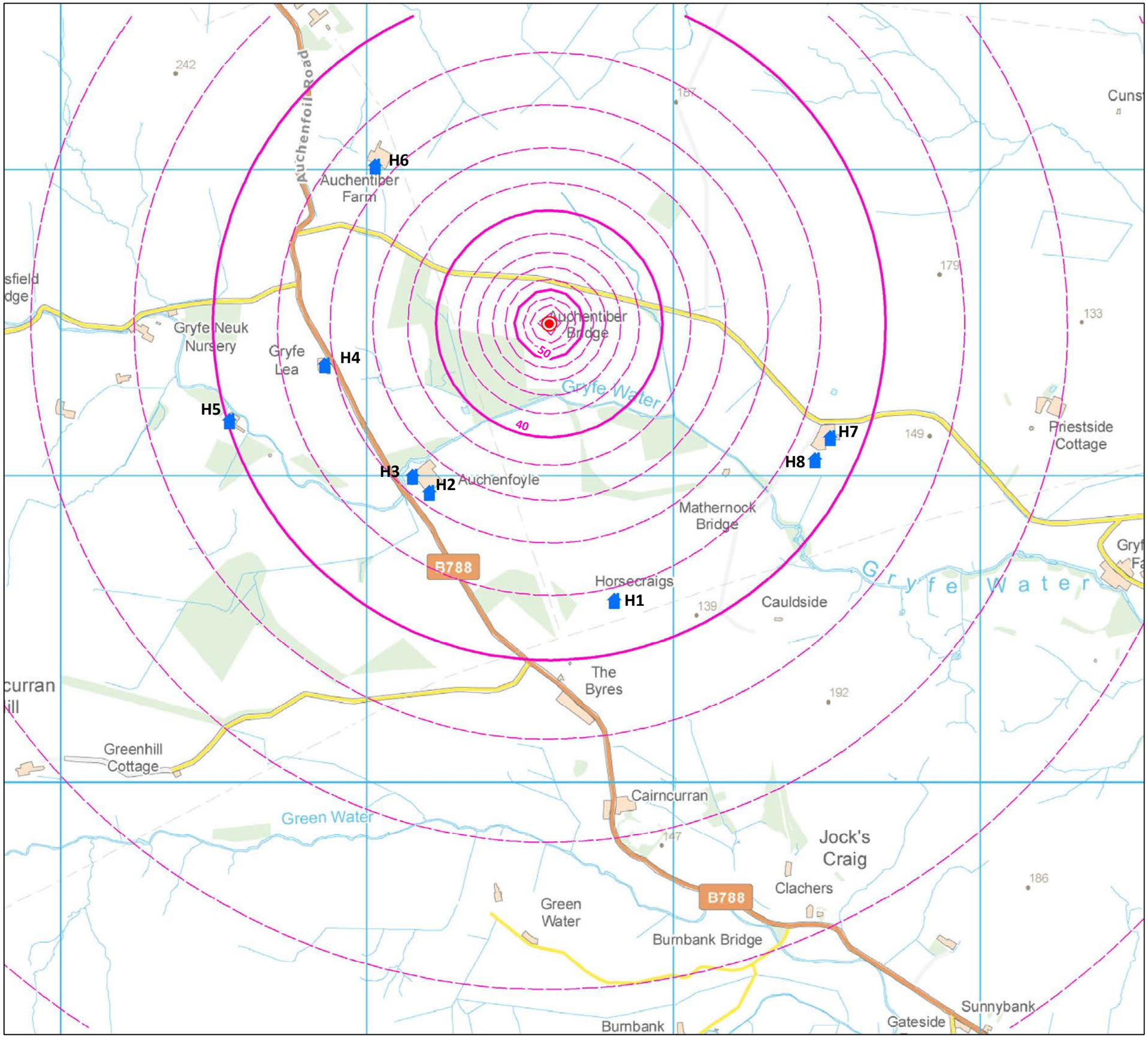
Figure 10.1: Noise Propagation Map for Proposed Development at Land southwest of Auchentiber Bridge



Legend:

- Proposed Turbine Location E:231595 N:671497
- Properties in Calculation
  - H1: Horsecraigs
  - H2: Auchenfoyle New Cottage
  - H3: Auchenfoyle Farmhouse
  - H4: Gryfe Lea and Donmour Cottages
  - H5: House SW of Gryfe Lea
  - H6: Auchentiber
  - H7: High Mathernock Farmhouse
  - H8: High Mathernock House
- 10dB(A) Bandings
- 2dB(A) Bandings

0 0.1 0.2 0.4 Kilometers

1:12,000

N

Site Name: Land southwest of Auchentiber Bridge
Client Name: Mr Dunn
Site Reference: WV1072
Drawing Reference: WV1072/007/B
Date: 18/12/2013
User: B.L

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Gamesa	**FINAL USER DOCUMENTATION**	*Code:* **GD027758-en** *Rev:* **4**
		Date: **07/07/09** *Pg.* **1** *of* **5**
		Approval process: **Electronic: PDM Flow**
Documentation Type: **Product**	*Title:* **G52 850kW 50/60 Hz Wind Turbine Power and Noise Emission Curves**	*Prepared:* **IRS**
Deliverable: **SC007**		*Verified:* **MJIDELA**
		Approved: **BLC**

INDEX

RECORD OF CHANGES

Rev.	Date	Author	Description
0	20/06/07	MIGARCIA	Initial version
1	24/08/07	MIGARCIA	Confidentiality level modified
2	18/11/08	IRS	Modification noise nomenclature Noise values also at low and high winds New template format
3	03/04/09	IRS	Noise values update
4	30/06/09	IRS	Update for low densities

1 AIM

This document presents the wind turbine power and noise emission curves of the G52 850kW wind turbine.

2 SCOPE

The values that appear in the current document are applicable to all the existing configurations for the G52 WT, for standard mode operation and depending on tower height. Tonality is not considered. This document is not applicable for hot weather package WT models.

3 DEFINITIONS AND ACRONYMS

WT: Wind Turbine.

Power (P) Expressed in kW, is the electrical power obtained at the generator's electrical terminals, and it does not include the losses in the transformer and high voltage cables of the WT or power that may consumed by internal wind turbine components. Power is measured as a 10 minutes average.

Wind Speed (W_S): Expressed in m/s, is the value at 10 minutes average value of the horizontal wind component measured at hub height.

Power Curve (CdP): Represents the P variation as a function of the W_S for the different WT operation modes.

Annual Production Expressed in [MWh], it is the total electric power produced in a WT during a period of one year, corresponding to a certain CdP and a certain wind distribution.

Wind distribution: A *Weibull* distribution used to characterize the wind speed as a function for the Weibull shape factors (*k*) and the average values of average annual W_{ave}.

Wind speed W_{10} [m/s]: The wind speed measured at a height of 10 m.

Tower height (H): Expressed in [m], is the height of the rotor centre above ground level

Power coefficient: C_P

Thrust coefficient: C_T

Noise Level: Mean value of the acoustic power emitted for the WT, denoted as Lw in the TS IEC-61400-14. It is expressed in dB(A) and represents the noise power emitted by the WT at hub height for a given wind speed. According to IEC standard the wind speed value (W_{10}) 10m above ground level is to be used.

In order to obtain the Lwd (apparent sound power level) as defined in IEC-61400-14, an increment of 2dB(A) has bee calculated for being added to the Lw at 95% confidence.

dB(A): The "A" filter is applied according to IEC.

4 DESCRIPTION

All the parameter values in the current document, unless otherwise indicated, are defined as shown in **Table 1.**

Rated Power	850 kW
Frequency	50 Hz/60Hz
Rotor diameterr	52 m
Blade tip angle	Pitch regulated
Turbulence intensity	10 % (for all wind speed values)
Air density	1.225 kg/m^3

Table 1 Parameter values for the power curve calculation of the G52 850kW wind turbine

Tower height [m]	**H = 44m**	**H = 49m**	**H = 55m**	**H = 65m**
W_S / W_{10} [m/s]	1.28	1.30	1.32	1.35

Table 2: relation between the wind speed at hub height **W_S** [m/s] and wind speed at a height of 10m **W_{10}** [m/s], according to *IEC 61400-11* standard, for a roughness length of 0.05m.

5 RESULTS FOR STANDARD OPERATION

Noise level: 103.8 dB(A). 2dB(A) should be added for Lwd.

5.1 STANDARD POWER CURVE

Table 3 shows the electrical power [kW] as a function of the horizontal wind speed [m/s] at the given hub height W_S [m/s], for different air densities [kg/m^3].

P [kW]	***Densidad del aire [kg/m3]***												
Wind [m/]	***0,940***	***0,970***	***1,000***	***1,030***	***1,060***	***1,090***	***1,120***	***1,150***	***1,180***	***1,210***	***1,225***	***1,240***	***1,270***
4	18,4	19,4	20,4	21,4	22,4	23,4	24,4	25,4	26,4	27,4	**27,9**	28,4	29,4
5	49,7	51,3	52,9	54,5	56,1	57,7	59,4	61,0	62,7	64,4	**65,2**	66,0	67,7
6	92,6	95,8	99,0	102,2	105,4	108,6	111,8	115,1	118,3	121,5	**123,1**	124,7	127,9
7	156,2	161,1	166,0	170,9	175,8	180,7	185,7	190,6	195,6	200,5	**203,0**	205,5	210,4
8	238,9	246,1	253,3	260,5	267,7	274,9	282,0	289,2	296,3	303,4	**307,0**	310,6	317,7
9	337,5	347,8	358,1	368,4	378,7	389,0	399,3	409,6	419,9	430,2	**435,3**	440,4	450,7
10	432,3	446,2	460,1	474,0	487,9	501,8	515,7	529,7	543,6	557,5	**564,5**	571,5	585,4
11	536,6	552,2	567,8	583,4	599,0	614,6	630,2	645,7	661,3	676,8	**684,6**	692,4	707,9
12	663,7	675,9	688,1	700,3	712,5	724,7	737,0	749,3	761,5	773,8	**779,9**	786,0	798,3
13	782,0	788,2	794,4	800,6	806,8	813,0	819,1	825,3	831,4	837,5	**840,6**	843,7	848,6
14	822,3	825,0	827,7	830,4	833,1	835,8	838,5	841,2	843,9	846,6	**848,0**	849,4	850,0
15	839,5	840,5	841,5	842,5	843,5	844,5	845,5	846,5	847,5	848,5	**849,0**	849,5	850,0
16	846,8	847,1	847,4	847,7	848,0	848,3	848,7	849,1	849,4	849,8	**850,0**	850,0	850,0
17 -> 25	850,0	850,0	850,0	850,0	850,0	850,0	850,0	850,0	850,0	850,0	**850,0**	850,0	850,0
26	821,6	821,6	821,6	821,6	821,6	821,6	821,6	821,6	821,6	821,6	**821,6**	821,6	821,6
27	793,2	793,2	793,2	793,2	793,2	793,2	793,2	793,2	793,2	793,2	**793,2**	793,2	793,2
28	764,8	764,8	764,8	764,8	764,8	764,8	764,8	764,8	764,8	764,8	**764,8**	764,8	764,8

Table 3 G52 850kW WT power [kW] calculated as a function of wind speed Ws [m/s] at different air densities [kg/m^3].

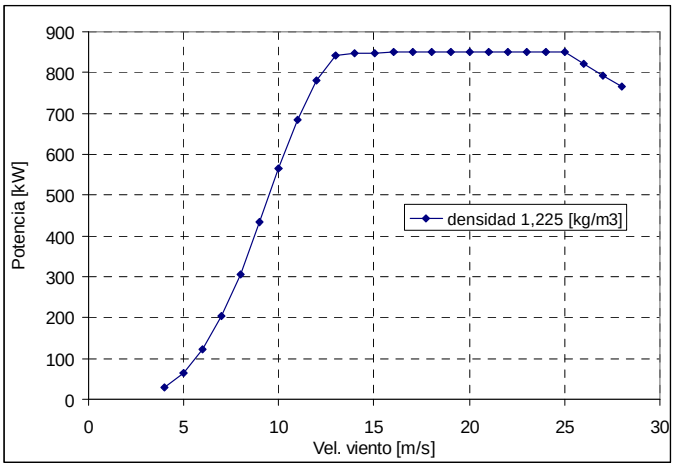

Figure 1 G52 850 kW WT power curve for an air density of 1.225 [kg/ m^3]

5.2 ANNUAL PRODUCTION

Table 4 shows the annual production [MWh] of the G52 850 kW for different *Weibull* shape factors *k* and average wind speeds $W_{ave.}$ [m/s]. Values are given for standard density 1.225 kg/m^3 and Turbulence Intensity 10%

AEP *[MWh]*		***W_{ave} [m/s]***					
		5 m/s	**6 m/s**	**7 m/s**	**8 m/s**	**9 m/s**	**10 m/s**
Weibull K	***1.5***	1,305	1,877	2,419	2,899	3,305	3,630
	2.0	1,110	1,757	2,422	3,049	3,607	4,081
	2.5	957	1,618	2.,355	3,084	3,746	4,318

Table 4 G52 850kW WT annual production [MWh] as a function of W_{ave} [m/s]

5.3 C_P AND C_T CURVES

Table 5 shows the C_P and C_T values of the G52 850kW wind turbine.

Vel. viento [m/s] Wind speed [m/s]	C_T	C_P
4	0.808	0.335
5	0.784	0.401
6	0.78	0.438
7	0.779	0.455
8	0.776	0.461
9	0.758	0.459
10	0.712	0.434
11	0.637	0.395
12	0.536	0.347
13	0.43	0.294
14	0.34	0.238
15	0.272	0.193
16	0.222	0.16
17	0.185	0.133
18	0.156	0.112
19	0.134	0.095
20	0.116	0.082
21	0.101	0.071
22	0.089	0.061
23	0.079	0.054
24	0.071	0.047
25	0.064	0.042

Table 5: G52 850 kW WT.C_P and C_T values.

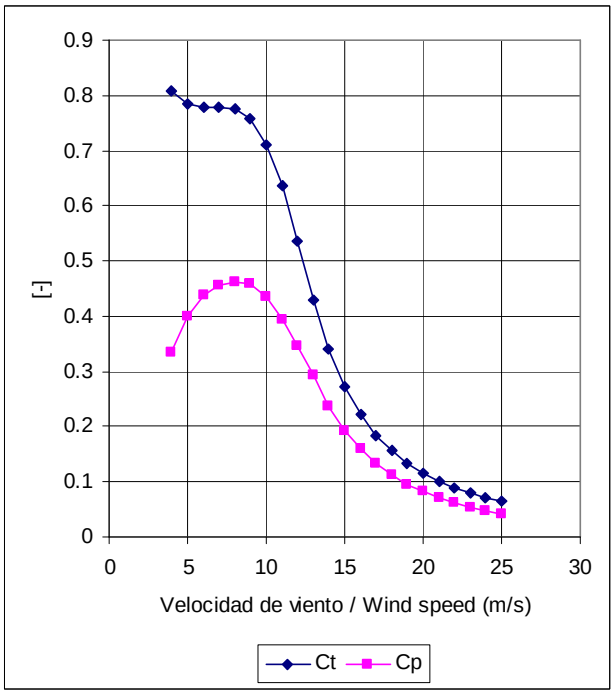

Figure 2: Curves C_P and C_t of the G52 850 kW 50_60Hz Wind Turbine

5.4 NOISE LEVEL

Calculated noise levels generated by the G52 850kW WT for different tower heights and wind velocities, based on the wind speed measured at 10m above ground.

Table 6: shows numerical noise values in dB(A) for different wind velocities.

W_{10} [m/s]	H = 44m		H = 49m		H = 55m		H = 65m	
	dB(A)	W_s [m/s]	dB(A)	W_s [m/s]	dB(A)	W_s [m/s]	dB(A)	W_s [m/s]
4	92,7	5,12	92,9	5,20	93,2	5,29	93,6	5,41
5	96,8	6,40	97,2	6,50	97,5	6,61	98,0	6,77
6	100,9	7,68	101,2	7,80	101,5	7,93	101,8	8,12
7	102,7	8,96	102,8	9,10	103,0	9,25	103,1	9,47
8	103,6	10,24	103,7	10,40	103,8	10,57	103,8	10,83
9	103,8	11,52	103,8	11,70	103,8	11,90	103,8	12,18
10	103,8	12,80	103,8	13,00	103,8	13,21	103,8	13,53
11	103,8	14,08	103,8	14,30	103,8	14,54	103,8	14,89
12	103,8	15,36	103,8	15,60	103,8	15,86	103,8	16,24

Table 6: G52-850kW WT noise level for different H [m], W_{10} [m/s] and W_S [m/s].

Figure 11.1: Shadow Flicker Map for development at Land southwest of Auchentiber Bridge

Legend:

Proposed Turbine Location
E: 231595 N: 671497

Shadow Flicker Annual Hours

- 30
- 31 - 40
- 41 - 50
- 51 - 60
- 61 - 70
- 71 - 80
- 81 - 90
- 91 - 100
- 101 - 110
- 111 - 120
- 121 - 130
- 131 - 140
- 141 - 150

0 0.045 0.09 0.18 Kilometers

1:5,000

N

Site Name: Land Southwest of Auchentiber Bridge
Client: Mr Dunn
Site Reference: WV1072
Drawing No: WV1072/003/A
Date: 25/09/2013
User: B.L

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w: www.vgenergy.co.uk

Figure 11.2: Shadow Flicker Map for development at Land southwest of Auchentiber Bridge

Legend:

- Proposed Turbine Location
- Properties in Calculation

Shadow Flicker Annual Hours

- 30
- 31 - 40
- 41 - 50
- 51 - 60
- 61 - 70
- 71 - 80
- 81 - 90
- 91 - 100
- 101 - 110
- 111 - 120
- 121 - 130
- 131 - 140
- 141 - 150

0 0.05 0.1 0.2 Kilometers

1:7,500

N

Site Name: Land Southwest of Auchentiber Bridge
Client: Mr Dunn
Site Reference: WV1072
Drawing No: WV1072/004/A
Date: 25/09/2013
User: B.L

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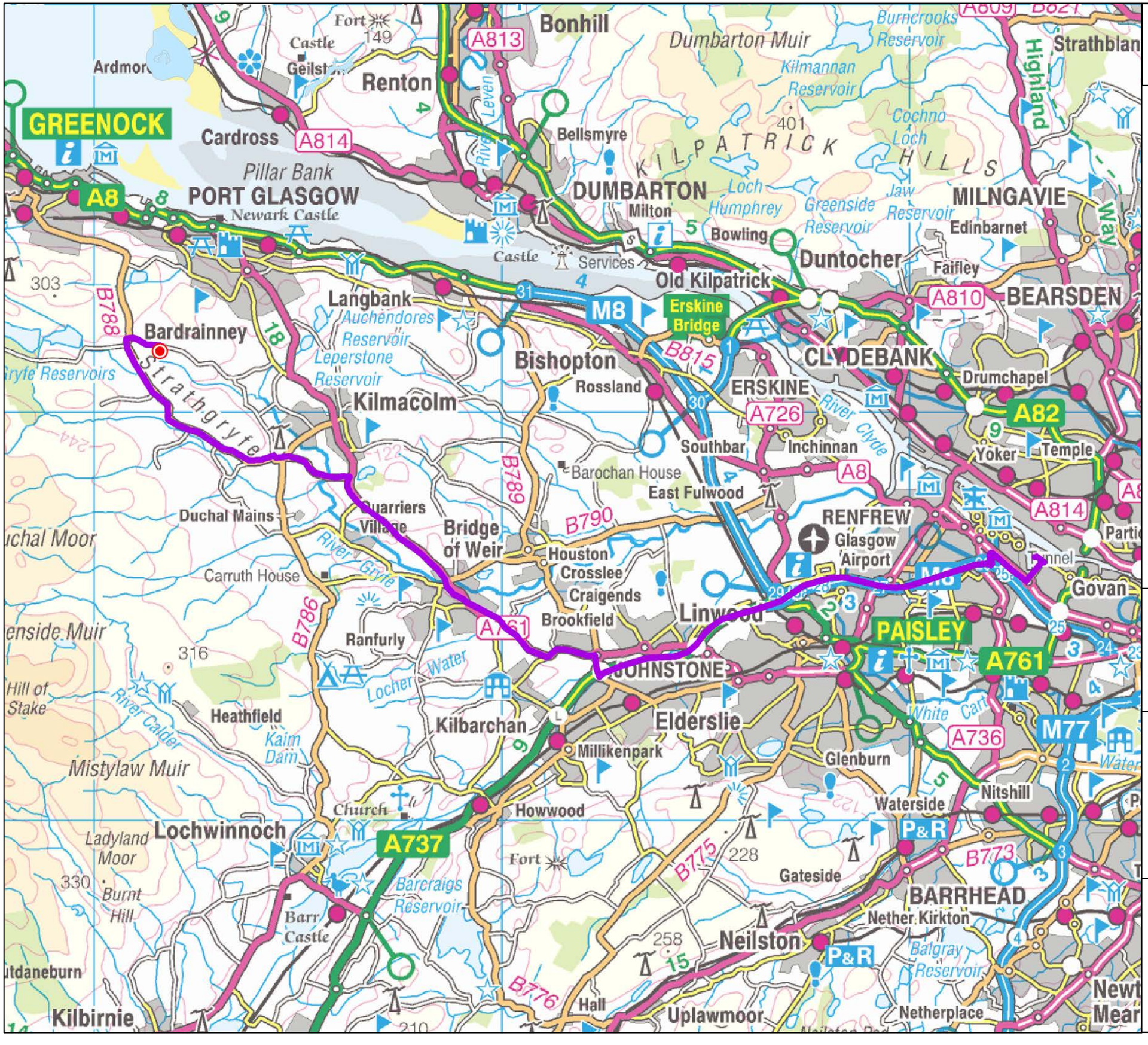

Figure 13.1: Proposed Delivery Route for development at Land southwest of Auchentiber Bridge

Legend:

Proposed Turbine Location
E:231595 N:671497

Proposed Delivery Route

0 0.5 1 2 Kilometers

1:90,000

N

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PLANNING PERMISSION APPEAL STATEMENT:

WIND TURBINE DEVELOPMENT AT LAND SOUTHWEST OF AUCHENTIBER BRIDGE

CLIENT:	MR J. DUNN
SITE LOCATION:	LAND SOUTHWEST OF AUCHENTIBER BRIDGE, AUCHENFOYLE, INVERCLYDE, PA13 4TL

Client	Mr J. Dunn
Site Name	Land southwest of Auchentiber Bridge
Client Number	WV1072
Prepared By	Planning & Environmental Department
Approved By	DA

EXECUTIVE SUMMARY

A planning application was submitted by VG Energy to install a single wind turbine development at Land southwest of Auchentiber Bridge, Auchenfoyle, which was registered by Inverclyde Council on 16.01.2014.

On 17.03.2014, planning permission was refused by the Council. This appeal statement seeks a review of the decision, and brings the following points to the attention of the Local Review Body:

- The installation of a single wind turbine development at Land southwest of Auchentiber Bridge will not generate unacceptable impacts to the local or wider landscape.
- Through the sensitive siting and design of the proposed development, no unacceptable adverse impact will be posed to the local road or Core Path network within the local landscape surrounding the development site.
- A single turbine will not generate unacceptable cumulative impacts, taking into account other wind energy developments within the local area.
- Study demonstrates that the development of a single turbine at Land southwest of Auchentiber Bridge will not cause loss of amenity to local residents. Careful consideration was given during the planning stages of the proposal for properties surrounding the site, ensuring no properties were submitted to unacceptable impacts, including visual, noise and shadow flicker. Additionally, **the Case Officer also states that the impacts to properties does not warrant refusal of planning permission**.
- Based on the in-depth study undertaken for the proposal, we would argue that the proposed development at Land southwest of Auchentiber Bridge adheres to policy set out by Inverclyde Council.

1 INTRODUCTION

This appeal statement seeks a review by the Local Review Body on the refusal of planning permission from Inverclyde Council with regards to the proposed installation of a single wind turbine and its associated infrastructure at Land southwest of Auchentiber Bridge, Auchenfoyle. The proposed turbine has a hub height of 44m, height to blade tip of 70m and a blade diameter of 52m.

The application was registered by Inverclyde Council on 16.01.2014 (Reference Number 14/0004/IC) and a decision for refusal was made by the Council's Case Officer on 17.03.2014. The planning application was submitted with a full Environmental Report and supplementary Appendix documents.

2 COUNCIL DECISION

2.1 Reasons for Refusal

The application was refused in relation to the following:

"*A combination of height, scale and prominence within this part of Inverclyde's countryside, proximity to three approved wind turbines and proximity to the core footpath network create an unexpected and dominant cluster of engineered structures detrimental to visual amenity and enjoyment of the countryside and contrary to:-*

a. *Policy UT6 of the Inverclyde Local Plan, criteria (a), (b), (c) and (d)*
b. *Interim Inverclyde Local Plan Policy UT6B, criteria (a) and (f)*
c. *Proposed Local Development Plan Policy INF criteria (b), (d) and (i)*
d. *Local Plan policy LR6."*

Although as a developer we respect the council's determination on this planning application, we disagree with the opinion that the proposed development contravenes the policies listed. It is our opinion that the impact of the proposed development has been fully analysed within the Environmental Report submitted (see Appendix A), and the effect of this turbine on the surrounding environment is low.

Our response to the Council's decision has been set out into subdivided categories in to address the main points of refusal with minimal repetition. These categories are:

- Residential Amenity;
- Landscape Impact;
- Impact to the Core Path and the Local Road Network; and
- Cumulative Impact.

Taking these points in turn, our rebuttal to the council's statement is as follows:

3 RESIDENTIAL AMENITY

3.1 Councils Decision

Within the Decision Notice issued by the Council, the development is noted to contravene the following policies with regards to residential amenity:

DOCUMENT	POLICY	
INVERCLYDE LOCAL PLAN	POLICY UT6	IN ASSESSING PROPOSALS FOR RENEWABLE ENERGY INFRASTRUCTURE, INVERCLYDE COUNCIL, AS PLANNING AUTHORITY, WILL HAVE REGARD TO THE IMPACT ON: (C) RESIDENTIAL AMENITY
INTERIM PLANNING POLICY POSITION STATEMENT ON SMALL SCALE WIND FARMS	POLICY UT6B	IN ASSESSING PROPOSALS FOR SMALL SCALE WIND TURBINE DEVELOPMENTS, INVERCLYDE COUNCIL, AS PLANNING AUTHORITY, WILL BE SUPPORTIVE WHERE THE PROPOSED DEVELOPMENT SATISFIES THE CRITERIA OF LOCAL PLAN POLICIES UT6 AND UT6A, WHERE RELEVANT, AND WILL HAVE REGARD TO THE IMPACT ON: (A) THE IMPACT ON NEIGHBOURING/ADJOINING PROPERTIES AND RESIDENTIAL AMENITY GENERALLY; (F) THE LANDSCAPE, ESPECIALLY WHEN VIEWED FROM PUBLIC VANTAGE POINTS, INCLUDING LOCAL ROADS, NEIGHBOURING SETTLEMENTS, AND WHEN SET AGAINST THE SKYLINE.

3.2 Our Rebuttal

In response to this, we would strongly disagree with the conclusions drawn that the proposed turbine at Land southwest of Auchentiber Bridge is in contravention of policies relating to Residential Amenity. It is also stressed that the Council have drawn this same conclusion within the Handling Report, contradicting their initial note of refusal on policy grounds.

Residential Amenity considers the potential impact to the amenity of properties near a development, with a focus on shadow flicker, noise and visual impact. As demonstrated within the Environmental Report submitted to the Council, the proposed development will not cause any unacceptable impacts to properties within the local area relating to shadow flicker, visual impacts or noise.

Within the Handling Report compiled by the Case Officer, he confirms that the development is within the guidelines set by Government in terms of the separation distance required for shadow flicker, i.e. ten times rotor diameter from nearby dwellings. As such, shadow flicker is not of concern for the proposed development and does not warrant refusal. The same is stated with regards to noise impacts associated with the turbine at nearby residential properties, with the Case Officer accepting the recommendation for conditions to be attached to any permission which is granted. The Case Officer draws the conclusion that properties within the area surrounding the turbine development will not be impacted adversely by noise or shadow flicker which would be to the detriment of residential amenity. VG Energy note this and agree with the conclusion.

In terms of visual impacts associated with the development, the Council have highlighted properties within 1km of the site as those which would need consideration. As is demonstrated clearly throughout the Environmental Report, along with the visualisations generated in the form of photomontages, the turbine will not create adverse views to the limited number of properties surrounding the development site. Within the LVIA of the Environmental Report (*p.99*), it is concluded that:

"*The developments setting within the landscape will have a moderate/minor effect on the visual amenity to sensitive receptors, an overall effect that is not significant and acceptable to area receptors and sites of identified importance; not creating an irreparable and detrimental medium to long-term change to views of recognised users of the landscape".*

This is further confirmed by the Case Officer within the Handling Report, whereby the conclusion is drawn that "*I consider, in this instance, that the nearest houses to the wind turbine do not have their visual amenity impacted to a degree that justifies refusal of planning permission*" (Handling Report, *p.7*).

As such, we do not only disagree with the Councils determination that the proposal fails to comply with residential amenity policy, we are also somewhat confused as to the decision, as the Case Officer himself has stated that the visual impact to properties does not warrant refusal of planning permission. Additionally, as stated previously, noise and shadow flicker are not considered to be an issue; therefore impact to residential amenity should not have been stated as a reason for refusal.

VG Energy would stress that the proposed turbine at Land southwest of Auchentiber Bridge has been sited sensitively to ensure that it does not adversely impact on views from residential properties within the local area, or on views from the wider landscape. It is the professional opinion of the VG Energy planning department that the development complies with policy relating to Residential Amenity, including Inverclyde Local Plan Policy UT6 criteria (c) and Interim Planning Policy Position Statement on Small Scale Wind Farms Policy UT6B criteria (a) and (f).

4 LANDSCAPE IMPACT

4.1 Councils Decision

Policies that Inverclyde Council determine the proposed application to contravene in relation to landscape impact include the following:

DOCUMENT	POLICY	
INVERCLYDE LOCAL PLAN	POLICY UT6	IN ASSESSING PROPOSALS FOR RENEWABLE ENERGY INFRASTRUCTURE, INVERCLYDE COUNCIL, AS PLANNING AUTHORITY, WILL HAVE REGARD TO THE IMPACT ON: (A) THE NATURAL ENVIRONMENT AND BUILT HERITAGE OF THE LOCALITY; (B) THE LANDSCAPE, PARTICULARLY WHEN VIEWED FROM MAJOR TRANSPORT CORRIDORS
INTERIM PLANNING POLICY POSITION STATEMENT ON SMALL SCALE WIND FARMS	POLICY UT6B	IN ASSESSING PROPOSALS FOR SMALL SCALE WIND TURBINE DEVELOPMENTS, INVERCLYDE COUNCIL, AS PLANNING AUTHORITY, WILL BE SUPPORTIVE WHERE THE PROPOSED DEVELOPMENT SATISFIES THE CRITERIA OF LOCAL PLAN POLICIES UT6 AND UT6A, WHERE RELEVANT, AND WILL HAVE REGARD TO THE IMPACT ON: (F) THE LANDSCAPE, ESPECIALLY WHEN VIEWED FROM PUBLIC VANTAGE POINTS, INCLUDING LOCAL ROADS, NEIGHBOURING SETTLEMENTS, AND WHEN SET AGAINST THE SKYLINE.
PROPOSED LOCAL DEVELOPMENT PLAN	POLICY INF1: RENEWABLE ENERGY DEVELOPMENTS	THE COUNCIL WILL SUPPORT DEVELOPMENT REQUIRED FOR THE GENERATION OF ENERGY FROM RENEWABLE SOURCES, SUBJECT TO THE PROPOSAL NOT HAVING SIGNIFICANT ADVERSE EFFECTS UPON: (B) THE LANDSCAPE AND WIDER ENVIRONMENTS

4.2 Our Rebuttal

It is the professional judgement of VG Energy's planning team that the proposed turbine development at Land southwest of Auchentiber Bridge will not impact the landscape adversely.

Within the Handling Report (*p.8*) it is noted:

> *"As further evidenced by the submitted photomontages there are adverse visual impacts upon the local views from Auchentiber Road, where it is seen to break the skyline and in longer views from the surrounding area where it is seen in conjunction with the turbines approved at High Mathernock and Priestside".*

VG Energy would stress that by their very nature, wind turbines will be viewed against the skyline in some views. The structure of a turbine is designed to utilise a good wind resource, and as such they are required to be positioned within the landscape at elevated positions. That a turbine can be seen against the skyline is not a reason to refuse the application. It is also important to note that the Case Officer has determined that the turbine breaks the skyline in

views from Auchentiber Road. Photomontage 6.7 (Junction of B788 Auchenfoil Road and Auchentiber Road) and Photomontage 6.15 (High Mathernock Farm) represent the visualisations generated from points along Auchentiber Road. As can be seen from these visualisations, the turbine is in fact viewed above the skyline; however, at a distance of between 0.9-1km from the development site, it is expected that such a structure would indeed be viewed on the skyline, or as the Case Officer states, '*is seen to break the skyline'*. This does not mean that the turbine is unacceptable or inconsistent with guidance.

In addition to this we would argue that the turbine has been sensitively sited within the development area to ensure that it does not adversely impact on the road network surrounding the site and the surrounding area. This is discussed further within Chapter 5 of this statement.

As can be seen from the photomontages generated, along with the written analysis contained within the Landscape and Visual Assessment chapter of the Environmental Report, although the proposed turbine will be visible, it does not pose unacceptable impact to views. The turbine has been sited to ensure the visual envelop in which is it evident over the geographical area is reduced significantly, as demonstrated by the ZTV submitted (Appendix Figure 6.24). As noted clearly within the LVIA (Environmental Report, *pp.64*), "*The proposed scheme has been sited within an area of suitable elevation to allow it to sit comfortably within the scale of the broader landscape, not exceeding the scope of the rolling topography".* Viewers of the development are not subjected to a development which does not fit into the landscape; the turbine is carefully sited to sit within the scene.

Additionally, although the proposed turbine will be viewed from certain vantage points along with the consented turbines at High Mathernock and Priestside, this does not warrant refusal of the application. Where the Case Officer suggests that the proposed turbine will be viewed 'in conjunction' with the consented developments, we would strongly stress that the proposed turbine has been sited to ensure it is read as a separate project, sited away from the consented turbines. Due to the siting of the proposed turbine at an elevation of 152m AOD, the development is located at a much lower point within the landscape, placed to utilise the abundant wind resource at the site whilst maintaining the integrity of the views throughout the area. As demonstrated throughout the visualisations generated, the proposed turbine at Land southwest of Auchentiber Bridge does not pose any unacceptable cumulative impacts. This is discussed further within Chapter 6 of this statement.

> *"The 70m to blade tip wind turbine is close to Auchentiber Road (approximately 100m to its south) and, given its significant scale, is a dominant structure in the landscape. I note that the turbine shall be viewed in the context of existing pylon lines, however, unlike an animated wind turbine, they are fixed structures and I do not consider their presence to justify planning permission being granted".*

We would disagree with this statement as the proposed turbine does not present a 'dominant structure' within the landscape. Located down from the highest point at the site, the visual envelope in which the turbine is visible within the wider landscape is reduced significantly. The impacts are further reduced by the undulating nature of the area in which the development is located.

Throughout the Environmental Report it is demonstrated that the proposed turbine does not present undue impact to views from the surrounding area. As noted, the area is interspersed by electrical infrastructure in the form of large scale pylons which present an existing modern man-made influence on the landscape. These pylons traverse the undulating landscape and are evident features within the visualisations generated. VG Energy are not arguing that the presence of these structures warrants the granting of planning permission, as we agree that both elements are different. However, we do argue that their presence within the landscape does reduce the impact associated with the installation of a new vertical element in the area; in this case, in the form of a wind turbine. As an ever-evolving agricultural environment with existing vertical features, the landscape is not wholly natural with no man-made influence. As stated previously, although the turbine will be visible from certain vantage points throughout the area, the undulating nature of the landscape along with the sensitive siting of the turbine ensures that the overall impact of the development is significantly reduced.

5 IMPACT TO THE CORE PATH AND THE LOCAL ROAD NETWORK

5.1 Councils Decision

In terms of impact to recreational sites and the local road network, the Council determine the application to contravene the following policies within Inverclyde:

DOCUMENT	POLICY	
INVERCLYDE LOCAL PLAN	POLICY UT6	IN ASSESSING PROPOSALS FOR RENEWABLE ENERGY INFRASTRUCTURE, INVERCLYDE COUNCIL, AS PLANNING AUTHORITY, WILL HAVE REGARD TO THE IMPACT ON: (B) THE LANDSCAPE, PARTICULARLY WHEN VIEWED FROM MAJOR TRANSPORT CORRIDORS; (D) TOURISM AND LEISURE RESOURCES, PARTICULARLY IF WITHIN THE CLYDE MUIRSHIEL REGIONAL PARK.
INTERIM PLANNING POLICY POSITION STATEMENT ON SMALL SCALE WIND FARMS	POLICY UT6B	IN ASSESSING PROPOSALS FOR SMALL SCALE WIND TURBINE DEVELOPMENTS, INVERCLYDE COUNCIL, AS PLANNING AUTHORITY, WILL BE SUPPORTIVE WHERE THE PROPOSED DEVELOPMENT SATISFIES THE CRITERIA OF LOCAL PLAN POLICIES UT6 AND UT6A, WHERE RELEVANT, AND WILL HAVE REGARD TO THE IMPACT ON: (F) THE LANDSCAPE, ESPECIALLY WHEN VIEWED FROM PUBLIC VANTAGE POINTS, INCLUDING LOCAL ROADS, NEIGHBOURING SETTLEMENTS, AND WHEN SET AGAINST THE SKYLINE.
PROPOSED LOCAL DEVELOPMENT PLAN	POLICY INF1: RENEWABLE ENERGY DEVELOPMENTS	THE COUNCIL WILL SUPPORT DEVELOPMENT REQUIRED FOR THE GENERATION OF ENERGY FROM RENEWABLE SOURCES, SUBJECT TO THE PROPOSAL NOT HAVING SIGNIFICANT ADVERSE EFFECTS UPON: (D) TOURISM, RECREATION AND CONSERVATION MATTERS.
INTERIM PLANNING POLICY POSITION STATEMENT ON SMALL SCALE WIND FARMS	POLICY LR6	INVERCLYDE COUNCIL, AS PLANNING AUTHORITY, WILL SEEK TO PROTECT AND PROMOTE THE 'CORE PATH NETWORK' (BOTH EXISTING AND PROPOSED) AND THE OTHER KEY THEMES OF THE ADOPTED INVERCLYDE ACCESS STRATEGY, WHERE THESE DO NOT CONFLICT WITH OTHER LOCAL PLAN POLICIES, IN PARTICULAR DS8 AND DS10.

5.2 Our Rebuttal

The proposed development at Land southwest of Auchentiber Bridge will not impact negatively on the recreational core path in the area or upon the local road network to an unacceptable degree. Throughout the design stages of this proposal, the upmost consideration was given not only to the onsite constraints but also to the constraints associated with the surrounding landscape, including the attractions linked with outdoor users such as the core path network and the local road network. As such, we would strongly disagree with the Case Officers findings.

"As such motorists (particularly those who travel regularly), residents, recreational cyclists and walkers shall pass through a landscape dominated by large wind turbines on each side of the road. The cumulative visual impact of the three approved wind turbines is, I consider, already significant, however, it is confined to the north side of Auchentiber Road. To grant planning permission in this instance would result in the road being straddled by wind turbines, thus increasing cumulative visual impact to a more significant and adverse degree."

With regards to the impact posed to Auchentiber Road, we strongly disagree with the Case Officers findings that the development will increase the cumulative impact to a 'more significant and adverse degree'. The proposed turbine is located approximately 850m southwest of the consented High Mathernock turbine and 1.2km southwest of the two consented Priestside turbines. As demonstrated within the photomontages generated, the separation distance between the developments allows the proposed turbine to be read as a separate scheme to those consented at much higher elevations within the landscape. Although the proposed turbine at Land southwest of Auchetiber Bridge is located on the southern side of Auchetiber Road, the separation distance between this and the consented turbines on the northern side, 850m to the closest development, does not create this 'dominant' sense of encompassing turbines which 'straddles' the roadway, as suggested by the Case Officer. Additionally, Auchentiber Road is a minor road, not a major transport route and the impact posed to this road as a result of the turbine is not adverse or of an unacceptable degree.

Safety is paramount to developments such as this, and as a result, the siting of the turbine has been decided upon with the upmost attention to the roads framing the development site. Again, we would strongly stress that the fact that a turbine is visible does not mean that it is a negative addition to the landscape. As such, we would disagree with the Councils determination on the application with regards to the impact to roads near the site.

"*They [photomontages] demonstrate that visual impact diminishes with distance, however the proposed wind turbine is of a size and design frequently used for small scale renewable energy developments and, I consider has an adverse impact most significant upon Auchentiber Road, which is a designated core footpath route. As such, I consider the proposal to be at conflict with Local Plan policy LR6 in that it is harmful to the enjoyment of the core path network…*

In summary, while there are wind turbines elsewhere throughout Scotland which are significantly higher than that proposed I consider that within the context of this part of Inverclyde's countryside the 70m to blade tip wind turbine introduces another dominant and unexpected visual interruption to the detriment of visual amenity and the recreational benefit of the core footpath network".

As part of the Environmental Report submitted, a detailed analysis of the potential impact to the Core Path Network near the site was conducted. This assessment is found in the Landscape and Visual Assessment Chapter, on pages 81 to 85 of the Environmental Report.

It is concluded that the Devol Road Core Path, 1.5km of which is sited north of Auchentiber Road, will be afforded open and uninterrupted views of the development towards the southeast. However, these views will be experienced at an oblique angle to the direction of

travel. These likely views are demonstrated within the photomontage generated from the Port Glasgow Golf Couse, approximately 1.3km northeast of the development site (See Figure 6.13). The turbine forms a clear new addition to the views experienced along this route, however its presence does not generate unacceptable levels of visual impact. The structure is fully back-dropped and afforded absorption into the varying landscape by the undulating forms of the Renfrewshire Heights which reduces the impact to long distance views from this elevated position along Devol Road.

In terms of impact posed to Core Path 29D which runs approximately 140m from the site along Auchentiber Road, our Landscape Architects addressed any issues relating to the development with the results outlined on page 82 of the Environmental Report. Within this assessment it is clearly stated that "*the introduction of a new, vertical feature will create an additional focus on the existing large scale electrical infrastructure"* for those users travelling along the pathway; however, occasional screening will be achieved by the topography in the area as the path weaves towards High Mathernock Farm south of Priestside Farm, reducing the overall impact of the development. Alongside this, the Core Paths numbered 29B and 29C which complete this Garshangan Woods to Auchentiber Road walk will experience broken views of this proposed turbine; however the structure does not dominate views as suggested by the Case Officer.

Additional Core Paths which are located within the surrounding landscape include Core Paths 43, 44, 32C and 57D; all of which are assessed in detail within the Environmental Report. Through this in-depth analysis it is the professional judgement of the VG planning department that the proposed turbine is sited appropriately within the landscape, where it does not adversely impact on the experiences gained from traversing the Core Path networks surrounding the site. As such, VG Energy would strongly disagree with the Case Officers determination that the application at Land southwest of Auchentiber Bridge would introduce "*another dominant and unexpected visual interruption to the detriment of visual amenity and the recreational benefit of the core path network*".

6 CUMULATIVE IMPACT

6.1 Councils Decision

The Decision Notice issued states that the proposed development at Land southwest of Auchentiber Bridge fails to comply with the following policy within Inverclyde:

DOCUMENT	POLICY	
PROPOSED LOCAL DEVELOPMENT PLAN	POLICY INF1: RENEWABLE ENERGY DEVELOPMENTS	THE COUNCIL WILL SUPPORT DEVELOPMENT REQUIRED FOR THE GENERATION OF ENERGY FROM RENEWABLE SOURCES, SUBJECT TO THE PROPOSAL NOT HAVING SIGNIFICANT ADVERSE EFFECTS UPON: (I) THE CUMULATIVE EFFECTS OF SUCH PROPOSALS.

6.2 Our Rebuttal

In response to this reason for refusal, we would strongly state that the introduction of a single wind turbine at Land southwest of Auchentiber Bridge will not generate unacceptable levels of cumulative impact, taking into account the developments already consented within the local landscape. As has been stated earlier within this appeal statement, the proposed turbine at land southwest of Auchentiber Bridge has been sited to ensure that the visual impact of the development is minimised to the greatest extent possible.

"*Three wind turbines have been granted on the hillside to the north of Auchentiber Road. The approved turbines are inter-visible with that under consideration in this report. As such motorists (particularly those who travel regularly), residents, recreational cyclists and walkers shall pass through a landscape dominated by large wind turbines on each side of the road. The cumulative visual impact of the three approved wind turbines is, I consider, already significant, however, it is confined to the north side of Auchentiber Road. To grant planning permission in this instance would result in the road being straddled by wind turbines, thus increasing cumulative visual impact to a more significant and adverse degree*."

We would disagree with the above statement from the Case Officer. With the Case Officer expressing personal disapproval of the already consented developments within the area, we do not feel that the proposed application has been given a fair chance with site specific assessment. The proposed turbine at Land southwest of Auchentiber Bridge has been carefully designed to ensure it presents a viable, efficient development at the site, whilst minimising the resultant impacts to the greatest extent possible. As a single turbine development, with no connection to the consented turbines at High Mathernock Farm and Priestside Farm, we feel it is unfair to state that this turbine will increase the '*already significant*' impact.

Within the Environmental Report, it is argued that although the introduction of a new man-made vertical element at the site would generate an impact, it is not foreseen that this impact is either negative or of an unacceptable level, neither as an individual turbine or cumulatively with other wind energy developments in the area. The Handling Report states that the cumulative impact would be unacceptable, however we strongly disagree.

As has been argued earlier in this statement, the installation of this single turbine on the south side of Auchentiber Bridge will not generate this 'straddling' effect suggested by the Case Officer. The proposed turbine is located 850m from the nearest consented turbine (High Mathernock application); a separation distance that ensures that the developments are read as separate projects. We strongly disagree with the suggestion that this single turbine at its proposed location would adversely alter the landscape to such a degree that warrants refusal of planning permission, inclusive of the turbines already consented within the local area.

Once again we would like to stress that the proposed turbine at Land southwest of Auchentiber Bridge has been sited sensitively within the landscape to minimise the visual envelope in which it is evident within the local and wider area. Where the turbine is visible from vantage points within the region, it does not pose an unacceptable impact. By following best practice guidance for the siting of turbines, the structure has been sited down from the highest point on the farm, unlike the turbines which have been granted locally. Though the proposed structure may be evident from vantage points within the local area along with the consented turbines, it does not generate adverse cumulative impacts.

As can be seen from the photomontages generated for the proposal, the separation distance between the proposed turbine and those that have received planning permission (though have yet to be built) allows the structures to be read as separate schemes, which in turn minimises the cumulative impact. It is evident from photomontages from near the development, such as Photomontage 3: Junction of B788 and Auchentiber Road (Figure 6.7) and Photomontage 8: Access Road to Horsecraigs, The Haven (Figure 6.17), that the separation distance between developments allows the proposed turbine at Land southwest of Auchentiber Bridge to be seen as a completely separate proposal to those already consented. Furthermore, viewpoints from further afield whereby the proposed turbine is visible along with the consented turbines, such as Photomontage 5: Cycle Route 75 (Figure 6.11), Photmontage 9: Knockbuckle Road (Figure 6.19), Photomontage 4: Junction of B788 Auchenfoil Road and A761 Bridge of Weir Road (Figure 6.9), and Photomontage 1: Junction of A761 Port Glasgow Road and Auchenbothie Road (Figure 6.3), all clearly show that the proposed turbine is sited appropriately and forms a separate development.

We would also like to highlight Photomontage 10: Port Glasgow High School (Figure 6.21) which illustrates the proposed turbine, inclusive of both consented developments at High Mathernock and Priestside Farms. From this viewpoint it is possible to fully appreciate not only the careful siting of the proposed turbine at a lower position within the landscape, but also the difference in the turbine developments. The proposed installation is clearly distinct as a separate development, whereby no cumulative impact is generated by this single turbine proposal which sits between the consented turbines and visible as only blade tip.

We appreciate that the Case Officer is entitled to his own opinion regarding the development; however we would strongly suggest that the proposed turbine development at Land southwest of Auchentiber Bridge does match Council Policy, and does not generate unacceptable levels of cumulative impact. No reference is made to the guidance relating to cumulative impact published by SNH, a Landscape Capacity Study or any other source, further emphasising that

the decision has been made on the personal opinion of the Case Officer. Cumulative impact relates to the change in perception of a landscape, however this single wind turbine at Land southwest of Auchentiber Bridge does not do this; the introduction of this new vertical man-made element does not generate unacceptable visual impact.

7 ADDITIONAL INFORMATION

We would like to address the following point raised by the Councils Case Officer, even though this was not highlighted as a reason for refusal in terms of policy as we feel it is an important addition to the proposal.

> *"I consider the potential benefits to local agriculture and the financial benefits to The Haven charity to be significantly outweighed by the adverse visual impact of the proposal."*

VG Energy is proud of, and enthusiastic about the relationship which we have built with the worthwhile and positive charity The Haven based at Horsecraigs. This relationship will guarantee The Haven an annual payment linked to the installed turbine, ensuring a financial contribution for the 25 year lifetime of the development.

The project will also provide the applicant, Mr Dunn and his family, the financial stability so desperately needed in today's agricultural market to continue farming the site and plan for the future. The volatile agricultural sector which is currently being experienced by farmers and landowners is a very difficult situation. A renewable energy diversification opportunity such as this turbine development will reduce the farms carbon footprint, increase their green credentials and secure the land within the Dunn family for future generations.
Through thorough assessment, we have demonstrated that the proposed turbine development at Land southwest of Auchentiber Bridge will not generate adverse visual impact to the local and wider area. We would strongly disagree with the Case Officers conclusion that the visual impact of the proposal outweighs the positive benefits of the development; namely as this single turbine development does not generate unacceptable visual impacts.

> *"Given my unfavourable assessment on impacts upon visual amenity, landscape character and visitors' enjoyment of the countryside I consider the proposal fails to accord with criterion (f) of Local Plan Policy UT6B, and consequently Policy UT6 (criteria a and b), Local Plan policy LR6 and proposed Local Development Plan policy INF1 criteria (a), (b) and (d)."*

Finally, we would like to raise awareness of the mistakes made in the above extract which can be found within the Handling Report on the final page (*p.9*). The policies highlighted within this section are not those which are noted within the Decision Notice as reasons for refusal, nor are they discussed within the Handling Report.
As demonstrated through the Environmental Report and accompanying appendix documents, and as emphasised within this Appeal Statement, the proposed development at Land southwest of Auchentiber Bridge does indeed match policy. The scheme does not present unacceptable impacts upon visual amenity, landscape character or the enjoyment experienced by visitors to the area. It is clear that the Case Officer has decided upon the application with already embedded disapproval of wind energy developments within Inverclyde, and specifically this region of the District. This was further confirmed during phone calls and meetings with the Council prior to the submission of the planning application. When VG Energy requested feedback and input from Inverclyde Council with regards to the design and development of a

wind turbine development at the site, it was made clear that the Council did not support wind energy schemes within its boundaries. As such, we do not believe that the application has been determined fairly, through site specific assessment and analysis of policy, as the Council do not support the installation of wind turbines within Inverclyde. In response to this, we respectfully request that the application is determined by the Local Review Body fairly and assessed in line with the relevant published policies.

8 CONCLUSIONS

The Environmental Report submitted shows through in-depth assessment and planning procedures, the development at Land southwest of Auchentiber Bridge is of a suitable size and scale for the surrounding landscape. Careful siting of the structure ensures that it does not negatively impact on views within the area, nor does it affect the amenity of dwellings within the local area. It is felt that wind energy is an excellent opportunity for diversification within the agricultural sector, particularly to those whom other forms of diversification are impractical or unbefitting of their particular area.

It is hoped that this appeal statement and the information presented through the original documents meets your requirements, and you are able to see the positive merits presented by this development not only to the applicant but also to the surrounding area. VG Energy respectfully requests you to overturn the decision issued by Inverclyde Council and grant planning permission for this proposal.

9 APPENDIX

APPENDIX A – Environmental Report for a Wind Turbine Development at Land Southwest of Auchentiber Bridge and associated Appendix documents

DECISION NOTICE

Inverclyde council

Refusal of Planning Permission
Issued under Delegated Powers

Regeneration and Planning
Municipal Buildings
Clyde Square
Greenock PA15 1LY

Planning Ref: 14/0004/IC

TOWN AND COUNTRY PLANNING (SCOTLAND) ACT 1997
TOWN AND COUNTRY PLANNING (DEVELOPMENT MANAGEMENT PROCEDURE) (SCOTLAND)REGULATIONS 2013

Mr John Dunn
Burnside Farm
Langbank
PA14 6TN

VG Energy Ltd
Bethan Lewis
Waterside Farm
Glasgow Road
GALSTON
KA4 8PB

With reference to your application dated 23rd December 2013 for planning permission under the above mentioned Act and Regulation for the following development:-

Erection of a single wind turbine 70m high to blade tip and associated infrastructure at

Land South-West of Auchentiber Bridge, Auchenfoyle, Auchentiber Road by Port Glasgow

Category of Application: Local Application Development

The INVERCLYDE COUNCIL in exercise of their powers under the abovementioned Act and Regulation hereby refuse planning permission for the said development.

The reason for the Council's decision is:-

A combination of height, scale and prominence within this part of Inverclyde's countryside, proximity to three approved wind turbines and proximity to the core footpath network create an unexpected and dominant cluster of engineered structures detrimental to visual amenity and enjoyment of the countryside and contrary to:-

a. Policy UT6 of the Inverclyde Local Plan, criteria (a), (b), (c) and (d)
b. Interim Inverclyde Local Plan Policy UT6B, criteria (a) and (f)
c. Proposed Local Development Plan Policy INF1 criteria (b), (d) and (i)
d. Local Plan policy LR6.

The reason why the Council made this decision is explained in the attached Report of Handling.

Dated this 17th day of March 2014

[redacted]

Head of Regeneration and Planning

Healthy Working Lives

Positive About Disabled People

1 If the applicant is aggrieved by the decision of the Planning Authority to refuse permission for or approval required by condition in respect of the proposed development, or to grant permission or approval subject to conditions, he may seek a review of the decision within three months beginning with the date of this notice. The request for review shall be addressed to The Head of Legal and Administration, Inverclyde Council, Municipal Buildings, Greenock,PA15 1LY.

2 If permission to develop land is refused or granted subject to conditions, and the owner of the land claims that the land has become incapable of reasonably beneficial use in its existing state and cannot be rendered capable of reasonably beneficial use by the carrying out of any development which has been or would be permitted, he may serve on the planning authority a purchase notice requiring the purchase of his interest in the land in accordance with Part 5 of the Town and Country Planning (Scotland) Act 1997

Refused Plans: Can be viewed Online at http://planning.inverclyde.gov.uk/Online/

Drawing No:	Version:	Dated:
WV1072/001/B		19.12.2013
WV1072/038/A		12.12.2013
WV1072/039/A		12.12.2013
WV1072/005/A		29.08.2013
WV1072/037/A		12.12.2013
WV1072/036/A		12.12.2013

Inverclyde council

REPORT OF HANDLING

Report By: **Guy Phillips**

Report No: **14/0004/IC**

Local Application Development

Contact Officer: **01475 712422**

Date: **6th March 2014**

Subject: **Erection of a single wind turbine 70m high to blade tip and associated infrastructure at Land South-West Of Auchentiber Bridge, Auchenfoyle, Auchentiber Road by Port Glasgow**

SITE DESCRIPTION

The site is in the Green Belt to the south of Auchentiber Road (a designated Core Footpath Route) which runs east to west between the B788 and Auchenbothie Road. Port Glasgow lies to the north and Kilmacolm to the south-east. There are two lines of electrity pylons in proximity to the site: one running south-east to north-west, approximately 300m to the east, and the other, approximately 1km to the south, running north-east to south-west. Residential properties in proximity to the site are Auchentiber Farm, approximately 740m to the north-west, Gryffe Lee, approximately 740m to the west, Auchenfoyle Farm approximately 570m to the south-west, and High Mathernock Farm, approximately 900m to the south-east.

PROPOSAL

It is proposed to construct a 70m to blade tip wind turbine accessed by an approximately 100 m long track to be formed off Auchentiber Road. Approximately 70m to the east of the proposed turbine is an approximately 12 square metre, flat roof, turbine meter housing with a roughcast finish.

On the hillside to the north of Auchentiber Road, planning permission has previously been granted for three wind turbines: one at High Mathernock Farm (following an appeal to the Scottish Government) and two at Priestside Farm (following an appeal to the Council's Review Body). An application for a single turbine at High Auchenleck Farm, also on the hillside to the north of Auchentiber Road, is under consideration. All lie to the north-east of the application site and are approximately 700m (High Mathernock), 1200m (Priestside), 1300m (Priestside) and 1500m (High Auchenleck) distant. None of the approved turbines have yet been erected, however, a temporary wind monitoring mast is in place at the High Mathernock site.

The site of the proposed Corlic Hill wind farm lies approximately 1.2km to the north-west.

DEVELOPMENT PLAN POLICIES

Local Plan Policy UT6 - Renewable Energy Infrastructure

In assessing proposals for renewable energy infrastructure, Inverclyde Council, as Planning Authority, will have regard to the impact on:

(a) the natural environment and built heritage of the locality;
(b) the landscape, particularly when viewed from major transport corridors;
(c) residential amenity;
(d) tourism and leisure resources, particularly if within the Clyde Muirshiel Regional Park; and
(e) the operation of aircraft and telecommunications equipment.

Local Plan Policy UT6A - Wind Farms of 20MW and Above

Wind farms with an output of 20 MW and over will be supported where:
Wind farms with an output of 20MW and over will be supported where:

a) the objectives of international natural heritage designation are not compromised or where the proposed development is likely to have an adverse effect:

- there is no alternative solution; and
- there are imperative reasons of over-riding public interest, including those of a social or economic nature;

b) the objectives of national natural heritage designation and the overall integrity of the area are not compromised or where any significant adverse effects on the qualities for which the area has been designated are clearly outweighed by social and economic benefits of national importance;

and where the proposed development:

c) is sited within the landform to ensure it does not have a detrimental effect on the landscape and wider environment;

d) does not have an unacceptable adverse impact on the positive strategic assets of Clyde Muirshiel Regional Park and the West Renfrew Hills Scenic Area, such as:

i. landscape and visual amenity;
ii. tourism;
iii. recreation; and
iv. conservation;

e) does not have an unacceptable adverse impact directly on the built heritage of the area or its setting;

f) does not have an unacceptable adverse impact on biodiversity;

g) does not have an unacceptable impact on the water environment, including its quality, quantity and ecological status;

h) does not lead to unacceptable cumulative impacts on the landscape;

i) does not have an unacceptable adverse effect on aviation interests;

and where:

j) in consultation with the relevant bodies, the presence of notifiable installations and exclusion zones are taken into account when designing sites; and

k) in consultation with the relevant bodies, the presence of broadcasting and telecommunications infrastructure are taken into account when designing sites.

Note (1) These criteria would also apply to smaller scale wind farms (<20MW) which can often be more easily accommodated in the landscape, therefore, some of the areas that are not suitable for strategic wind farms could be acceptable. It would still be necessary to protect the environmental and built heritage resources and the local community by ensuring they were designed and sited to incur minimum impact. Given the variety of combinations and sizes of turbines that could be used to produce an output up to 20MW, it is likely that it will only be possible to determine what is acceptable when specific applications are assessed.

Local Plan Policy UT6B - Small Scale Wind Turbine development

In assessing proposals for small scale wind turbine developments, Inverclyde Council, as Planning Authority, will be supportive where the proposed development satisfies the criteria of Local Plan Policies UT6 and UT6A, where relevant, and will have regard to the impact on:

a) neighbouring/adjoining properties and residential amenity generally;
b) road safety;
c) natural and built heritage resources in proximity to the site;
d) wildlife resources and habitats;
e) proximity to pylons and overhead power lines, and other service infrastructure; and
f) the landscape, especially when viewed from public vantage points, including local roads, neighbouring settlements, and when set against the skyline.

Local Plan Policy DS8 - Green Belt

There is a presumption against development in the designated Green Belt, as identified on the Proposals Map. Proposals will only be considered favourably in exceptional or mitigating circumstances and where the criteria for development in Policy DS10 for the 'Countryside' can be satisfied.

Local Plan Policy DS10 - Countryside

Development within the countryside (including the Green Belt) will be permitted only where it can be supported with reference to the following criteria:

(a) it is required for the purposes of agriculture and forestry;
(b) it is a recreation, leisure or tourism proposal which is appropriate for the countryside and contributes to the social and economic development of the area;
(c) there is a specific locational requirement for the use and it cannot be accommodated on an alternative site;
(d) it entails appropriate re-use of vacant buildings which it would be desirable to retain for their historic or architectural character; or
(e) it forms part of an establishment or institution standing in extensive grounds; and
(f) it does not adversely impact on the landscape character;
(g) it does not adversely impact on the natural heritage resource;
(h) it does not adversely affect the visual amenity of the area and is capable of satisfactory mitigation;
(i) there is a need for additional land for development purposes, provided it takes account of the requirements of the Structure Plan; and
(j) it complies with other relevant Local Plan policies.

Local Plan Policy HR1 - Designated Environmental Resources and Built Heritage

Development that would adversely affect, directly or indirectly, the natural or built heritage resources listed in Schedule 9.1 and where indicated, on the Proposals Map, will not normally be permitted.

Having regard to the designation of the environmental resource and built heritage, exceptions will only be made where:

(a) Sites of Special Scientific Interest (SSSI) will not be compromised;
(b) visual amenity and townscape will not be compromised;
(c) no other site, identified in the Local Plan as suitable, is available;
(d) the social and economic benefits of the scheme outweigh the total or partial loss of the environmental resource;
(e) the developer has demonstrated that the impact of the development on the environment will be minimised; and
(f) the loss can be compensated by habitat creation/site enhancement elsewhere, and where there are satisfactory arrangements to achieve this.

Local Plan Policy LR6 - Inverclyde Access Strategy

Inverclyde Council, as Planning Authority, will seek to protect and promote the 'core path network' (both existing and proposed) and the other key themes of the adopted Inverclyde Access Strategy, where these do not conflict with other Local Plan policies, in particular DS8 and DS10.

PROPOSED LOCAL DEVELOPMENT PLAN POLICIES

Policy SDS8 - Green Belt and the Countryside

There will be a presumption against the spread of the built-up area into the designated Green Belt and careful management to prevent sporadic development in the designated Countryside, as identified on the Proposals Map.

Policy ENV2 - Green Belt and the Countryside

Development in the Green Belt will only be considered favourable in exceptional or mitigating circumstances, while development in the Countryside will only be considered favourably where it can be supported with reference to the following criteria:

(a) it is required for the purposes of agriculture, forestry or, where appropriate, renewable energy (refer Policy INF1); or

(b) it is a recreation, leisure or tourism proposal which is appropriate for the countryside and has an economic, social and community benefit (refer to Policy ECN6); or

(c) there is a specific locational requirement for the use and it cannot be accommodated on an alternative site (refer Policies INF3 and INF7); or

(d) it entails appropriate re-use of redundant habitable buildings, the retention of which is desirable for either their historic interest or architectural character or which form part of an establishment or institution standing in extensive grounds (refer to Policy RES7); and

(e) it does not adversely impact on the natural and built heritage, and environmental resources;

(f) it does not adversely impact on landscape character;

(g) it does not adversely impact on prime quality agricultural land;

(h) it does not adversely impact on peat land with a high value as a carbon store;

(i) it does not adversely affect the visual amenity of the area and is capable of satisfactory mitigation;

(j) there is a need for additional land for development purposes, provided it takes account of the requirements of the Strategic Development Plan; and

(k) it has regard to Supplementary Guidance on Planning Application Advice.

Policy INF1 - Renewable Energy Developments

The Council will support development required for the generation of energy from renewable sources, subject to the proposal not having significant adverse effects upon:

(a) natural heritage designations (international and national designations should not be compromised);
(b) the landscape and wider environment;
(c) neighbouring settlements;
(d) tourism, recreation and conservation matters;
(e) the built heritage;
(f) biodiversity and the water environment;
(g) air quality;
(h) road safety and service infrastructure; and
(i) the cumulative effect of such proposals.

CONSULTATIONS

Civil Aviation Authority - No objections.

BAA Aerodrome Safeguarding - No objections.

NATS - CTC - No objections.

MOD Safeguarding - No objections.

Head of Environmental and Commercial Services - No objections subject to a visibility splay of 120m x 2.4m x 1.05m being achieved at the junction with Auchentiber Rd and 15 m of the access from Auchentiber Rd being surfaced in an impervious material.

Head of Safer and Inclusive Communities - No objections subject to the attachment of conditions to control the spread of Japanese Knotweed, potential ground contamination and noise and an advisory note on CDM Regulations.

PUBLICITY

The application was advertised in the Greenock Telegraph on 24th January 2014 as there are no premises on neighbouring land.

SITE NOTICES

The nature of the proposal did not require a site notice.

PUBLIC PARTICIPATION

Ten written representations have been received, of which eight are in objection and two in support.

The objectors to the proposal are concerned that:

- the proposed turbine creates an adverse visual impact in this part of Inverclyde's countryside, immediately outwith Clyde Muirshiel Regional Park. The adverse visual impact is significantly exacerbated by the turbines approved and proposed at the

nearby Priestside, High Mathernock and High Auchenleck, cumulating to form a mini wind farm over a small area of approximately one square kilometre.
- the proposal is commercial with power generated being sold to the National Grid and not used by the farm.
- there shall be noise nuisance.
- a precedent shall be set for other large scale developments.
- there is no need for more wind turbines in Scotland.
- wind turbines are not beneficial in tackling climate change.
- wind turbines are harmful to health.

The representations in support of the proposal advise that if planning permission is granted, the revenue generated by the turbine shall allow the applicant to renew fences, drain land and continue farming on a small acreage that is in his ownership and that The Haven charity shall be a beneficiary of a community fund to be set up to spread the benefit of the development to the wider community. The charity operates a rehabilitation facility at Horsecraigs, approximately 880m to the south of the application site.

ASSESSMENT

The site is located within the Green Belt, where Local Plan policies LR1, DS8 and DS10 and proposed Local Development Plan policies SDS8 and ENV2 apply. However, as a renewable energy development which may be expected to be located in a Green Belt/rural location, it is considered appropriate to assess the proposal against national and local planning policy for such developments.

The general planning policy position, stemming from Scottish Planning Policy, is that planning authorities should support the development of a diverse range of renewable energy technologies and that development plans or supplementary guidance must clearly indicate factors that will be taken into account in decision making. The Government itself provides web based renewables advice and this is reflected in the Council's Interim Planning Policy Position Statement on Small Scale Wind Farms, approved by the Safe Sustainable Communities Committee in March 2011, and by policy INF1 of the proposed Local Development Plan and its associated supplementary guidance. The assessment of this application against the policy position leads me to consider that while the proposal meets certain development criteria, the proposal overall is unacceptable. This position is explained in detail below.

The Interim Planning Policy Position Statement on Small Scale Wind Farms introduced a new Policy UT6B which identifies that the Council will be supportive of development where the criteria of Policies UT6 (Renewable Energy Infrastructure) and UT6A (Wind Farms of 20MW and above) have been met and there has been regard to:

a) the impact on neighbouring and nearby properties and residential amenity generally;
b) road safety;
c) natural and built heritage resources in proximity to the site;
d) wildlife resources and habitats;
e) proximity to pylons and overhead power lines and other service infrastructure;
f) the landscape, especially when viewed from public vantage points, including local roads; neighbouring settlements, and when set against the skyline.

Proposed Local Development Plan policy INF1 supports development required for the generation of energy from renewable sources, subject to them having no significant adverse effects upon a range of matters. The relevant matters in this instance are:

(a) natural heritage designations (international and national designations should not be compromised);
(b) the landscape and wider environment.
(d) tourism, recreation and conservation matters.

The Supplementary Guidance on Renewable Energy related to policy INF1 advises that the Council is funding a landscape capacity study in association with the local authorities in the Glasgow and the Clyde Valley Strategic Development Plan Authority to assess the landscape or accommodating all sizes of wind energy developments. When this is completed, it will be incorporated into the supplementary guidance. In the meantime the landscape and visual impact of any proposed development will be considered on a case by case basis from the information included with the developer's assessment. It is further advised by the supplementary guidance that the impact of the wind turbines upon a range of issues be addressed, including, green belt, cumulative impact, natural heritage designations, birds, the historic environment, communities, aviation, water, broadcasting installations and shadow flicker.

Local Plan Policies UT6 and UT6A and the supplementary guidance to proposed Local Development Plan policy INF1 require consideration of the potential impact on the operation of aircraft and telecommunications equipment, and I note that the National Air Traffic Service, BAA and the MOD offer no objections.

Criterion (b) of Local Plan policy HR1, (f) of Local Plan policy UT6B and (b) of proposed Local Development Plan policy INF1 require consideration to be given to landscape, visual amenity and the visual impact when viewed from public vantage points, including local roads, neighbouring settlements and when set against the skyline.

Local Plan Policies UT6 and UT6A and policy INF1 of the proposed Local Development Plan also require assessment of the impact on the natural and built environment, landscape, and residential amenity, all of which are also addressed by assessment against Local Plan policy UT6B (criteria a), b), c), d), e) and f). Countryside tourism is inextricably linked to the quality of landscape and views from public vantage points, and it is appropriate to consider this in an assessment against policy UT6B (criterion f). Criterion (a), (b), (d) and (i) of proposed Local Development Plan policy INF1 apply.

Accordingly it remains to assess the application against the relevant criteria listed in Local Plan policy UT6B and policy INF1 of the proposed Local Development Plan with reference to Scottish Planning Policy and other development plan policies as applicable.

a) Impact on neighbouring and nearby properties and residential amenity generally.

Policy UT6B and policy INF1 combine to require development to have regard to impact on neighbours, general residential amenity and cumulative impact. Potential impacts on nearby residential amenity arise from visual impact, noise and shadow flicker. The shadow flicker map included within the Appendix of the Environmental Report demonstrates that there are no houses impacted by shadow flicker. The Scottish Government's online advice "Onshore Wind Turbines" advises that where separation is provided between wind turbines and nearby dwellings of 10 rotor diameters shadow flicker should not be a problem. In this instance that figure is approximately 520m. Accordingly, shadow flicker does not impact residential property and the proposal accords with Government advice on separation. There are no objections from the Head of Safer and Inclusive Communities regarding noise impact, however, I am in agreement with his recommendation for the attachment of a condition to control noise in the event that planning permission were to be granted. There are four residential properties within 1 km of the site and the photomontage viewpoint locations map within the Appendix to the Environmental Report confirms that all of them fall within the area from which the turbine can be seen. Having assessed the relative positions of these properties to the proposed turbine, I consider that residents shall suffer some adverse impact upon their visual amenity, likely to be further exacerbated by a cumulative impact with the nearby turbines approved at Priestside and High Mathernock. Visual impact, however, diminishes with distance and I consider, in this instance, that the nearest houses to the wind turbine do not have their visual amenity impacted to a degree that justifies refusal of planning permission.

b) Road safety.

There are no objections from the Head of Environmental and Commercial Services on road safety grounds.

c)&d) Natural and built heritage resources in proximity to the site and wildlife resources and habitats.

The Devol Road Upland SINC site lies to the north–east of the site, across Auchentiber Road. I am, however, satisfied that it is not impacted by the proposal. The proposal therefore also accords with criterion (a) of proposed of proposed Local Development Plan policy INF1.

e) Proximity to pylons and overhead power lines and other service infrastructure.

The height of the proposed turbine is significantly exceeded by its separation from the two pylon lines. As such, I consider the proximity to be acceptable.

f) The landscape, especially when viewed from public vantage points, including local roads, neighbouring settlements, and when set against the skyline.

Scottish Government guidance for assessing visual impact indicates that scale is a relevant consideration, taking into account the significance of the landscape and the views, proximity, intervisibility and sensitivity of visual receptors. The submitted photomontages and wire frame diagrams are taken from viewpoints ranging between 0.8 and 5.6km away. They demonstrate that visual impact diminishes with distance, however, the proposed wind turbine is of a size and design frequently used for small scale renewable energy developments and, I consider has an adverse impact most significant upon Auchentiber Road, which is a designated core footpath route. As such, I consider the proposal to be at conflict with Local Plan policy LR6 in that it is harmful to the enjoyment of the core path network. The 70m to blade tip wind turbine is close to Auchentiber Road (approximately 100m to its south) and, given its significant scale, is a dominant structure in the landscape. I note that the turbine shall be viewed in the context of existing pylon lines, however, unlike an animated wind turbine, they are fixed structures and I do not consider their presence to justify planning permission being granted. Three wind turbines have been granted on the hillside to the north of Auchentiber Road. The approved turbines are inter-visible with that under consideration in this report. As such motorists (particularly those who travel regularly), residents, recreational cyclists and walkers shall pass through a landscape dominated by large wind turbines on each side of the road. The cumulative visual impact of the three approved wind turbines is, I consider, already significant, however, it is confined to the north side of Auchentiber Road. To grant planning permission in this instance would result in the road being straddled by wind turbines, thus increasing cumulative visual impact to a more significant and adverse degree.

As further evidenced by the submitted photomontages there are adverse visual impacts upon the local views from Auchentiber Road, where it is seen to break the skyline and in longer views from the surrounding area where it is seen in conjunction with the turbines approved at High Mathernock and Priestside. The greatest adverse visual impacts are, I consider upon occupiers of the houses within 1km of the site and upon travellers who would experience the presence of large wind turbines on each side of Auchentiber Road.

In summary, while there are wind turbines elsewhere throughout Scotland which are significantly higher than that proposed I consider that within the context of this part of Inverclyde's countryside the 70m to blade tip wind turbine introduces another dominant and unexpected visual interruption to the detriment of visual amenity and the recreational benefit of the core footpath route.

In response to the objectors' concerns not covered by my assessment against the Local Plan and proposed Local Development Plan:

- the use of the turbine to provide income to support farming is, I consider, an acceptable alternative to using power directly for agricultural use but does not provide a justification for such a significant visual intrusion.
- precedent is not a justification for refusing planning permission as each planning application requires to be considered on its own merits.
- climate change and potential harm to health are not material planning considerations.

Regarding the representations in support of the proposal, I consider the potential benefits to local agriculture and the financial benefits to The Haven charity to be significantly outweighed by the adverse visual impact of the proposal.

Given my unfavourable assessment on impacts upon visual amenity, landscape character and visitors' enjoyment of the countryside I consider the proposal fails to accord with criterion (f) of Local Plan Policy UT6B, and consequently Policy UT6 (criteria a and b), Local Plan policy LR6 and proposed Local Development Plan policy INF1 criteria (a), (b) and (d)

RECOMMENDATION

That the application be refused.

Reason

A combination of height, scale and prominence within this part of Inverclyde's countryside, proximity to three approved wind turbines and proximity to the core footpath network create an unexpected and dominant cluster of engineered structures detrimental to visual amenity and enjoyment of the countryside and contrary to:-

a. Policy UT6 of the Inverclyde Local Plan, criteria (a), (b), (c) and (d)
b. Interim Inverclyde Local Plan Policy UT6B, criteria (a) and (f)
c. Proposed Local Development Plan Policy INF1 criteria (b), (d) and (i)
d. Local Plan policy LR6.

Signed: [redacted]

Case Officer: Guy Phillips

[redacted]

Stuart Jamieson
Head of Regeneration and Planning

EMAIL DATED 27 JUNE 2014 FROM MINISTRY OF DEFENCE

Rona McGhee

From: DIO ODC-IPS SG2 (Hodgetts, Lucy C1) <DIOODC-IPSSG2@mod.uk>
Sent: 27 June 2014 13:24
To: Rona McGhee
Subject: 20140627_14/0004/IC - land south-west of Auchentiber Bridge, Auchenfoyle, Auchentiber Road by Port Glasgow_O
Attachments: 20140627_DIO to Inverclyde Council _Review_O.pdf

Dear Ms McGhee,

Please find attached the Ministry of Defence's response in relation to review reference 14/0004/IC – land south-west of Auchentiber Bridge, Auchenfoyle, Auchentiber Road by Port Glasgow.

Should you require any additional information, please do not hesitate to contact me.

Yours sincerely

Lucy

Lucy Hodgetts

Senior Safeguarding Officer - Infrastructure Professional Services - Safeguarding
DIO Operations Development and Coherence

Defence
Infrastructure
Organisation

Building 49, Kingston Road, Sutton Coldfield, West Midlands, B75 7RL

MOD telephone: 94421 2443¦ **Telephone:** 0121 311 2443¦ **Fax:** 0121 311 2218

Email: DIOODC-IPSSG2@mod.uk¦ **Website:** www.gov.uk/mod-safeguarding

PLEASE NOTE MY NEW EMAIL ADDRESS. EMAILS TO MY OLD EMAIL ADDRESS SHOULD BE FORWARDED AUTOMATICALLY.

Defence Infrastructure Organisation

Ministry of Defence
Safeguarding
Kingston Road
Sutton Coldfield
West Midlands B75 7RL
United Kingdom

Telephone [MOD]: +44 (0)121 311 2443
Facsimile [MOD]: +44 (0)121 311 2218
E-mail: DIOODC-IPSSG2@mod.uk

Your Ref. 14/0004/IC
DIO Ref. DE/C/SUT/43/10/1/19798

Via Email

Rona McGhee
Regeneration and Planning Service
Inverclyde Council
Municipal Buildings
Greenock
PA15 1LX

27 June 2014

Dear Ms McGhee,

Review of decision to refuse planning permission – land south-west of Auchentiber Bridge, Auchenfoyle, Auchentiber Road by Port Glasgow
Review reference number – 14/0004/IC

The Ministry of Defence (MOD) has received notification from Inverclyde Council stating that the Council's decision to refuse planning permission for the proposed development above will be reviewed by the Council's Local Review Body.

The MOD submitted a response dated 6th January 2014 on 6th February 2014 to Inverclyde Council raising no objection to the proposal.

The MOD has reviewed this response in light of the appeal and I can confirm that the MOD raises no objection to the proposal.

If planning permission is granted, the MOD would like to be advised of the following information;

- The date construction starts and ends;
- The maximum height of construction equipment;
- The latitude and longitude of the turbine erected

I trust that the above will be taken into account during the review consideration. Should you require any additional information, please do not hesitate to contact me.

Yours sincerely

Lucy Hodgetts
BSc (Hons) MA MRTPI - Senior Safeguarding Officer

SUGGESTED CONDITIONS SHOULD PLANNING PERMISSION BE GRANTED ON REVIEW

ERECTION OF A SINGLE WIND TURBINE 17 METRES HIGH TO BLADE TIP AND ASSOCIATED INFRASTRUCTURE AT LAND SOUTHWEST OF AUCHENTIBER BRIDGE, AUCHENFOYLE, AUCHENTIBER ROAD, BY PORT GLASGOW (14/0004/IC)

Suggested conditions should planning permission be granted on review

Conditions:-

1.That prior to the start of development, details of a survey for the presence of Japanese Knotweed shall be submitted to and approved in writing by the Planning Authority and that, for the avoidance of doubt, this shall contain a methodology and treatment statement where any is found. Development shall not proceed until treatment is completed as per the methodology and treatment statement. Any variation to the treatment methodologies will require subsequent approval by the Planning Authority prior to development starting on site.

2.That the presence of any previously unrecorded contamination that becomes evident during site works shall be brought to the attention of the Planning Authority within one week. Consequential Remediation Strategy shall not be implemented unless it has been submitted to and approved, in writing by the Planning Authority.

3.The use of the development shall not commence until the applicant has submitted a completion report for approval, in writing by the Planning Authority detailing all fill or landscaping material imported onto the site. This report shall contain information of the materials source, volume, intended use and verification of chemical quality (including soil-leachate and organic content etc) with plans delineating placement and thickness.

4.The level of noise emissions from the wind turbines when measured at any dwelling, lawfully existing at the date of permission shall not exceed:

a. between the hours of 23:00 and 07:00 the greater of 43dB L_A90 (10 min) or 5dB(A) above the Night Hours Background Noise level at that property; or

b. between the hours of 07:00 and 23:00 the greater of 40dB L_A90 ((10 min) or 5 dB(A) above the quiet Waking Hours Day Time Background Noise Level at that property.

5.The permission hereby granted shall endure for a period of 25 years from the commencement of development. At the end of the 25 year period, unless with the express approval in writing of the Planning Authority, the equipment shall be dismantled and removed from the site, and the ground fully reinstated to its former condition to a depth of no less than one metre below ground surface level or such other means of restoration shall be carried out as may be agreed in writing by the Planning Authority.

6.In the event that the turbine fails to produce any electricity supplied to the grid for a continuous period of twelve months then it shall be deemed to have ceased to be required and, unless agreed in writing with the Planning Authority, the wind turbine and the ancillary equipment directly associated with that wind turbine shall be dismantled and removed from the site, and the ground fully reinstated to the written satisfaction of the Planning authority, to the specification set out in condition 5.

7. That confirmation of the details of the finish and colour of the control kiosk, shall be submitted to and agreed in writing by the Planning Authority prior to the commencement of development.

8. That a visibility splay of 120m x 2.4m x 1.05m high shall be provided at the junction of the access to the development with Auchentiber Road.

9. That the first 15m of the access road from Auchentiber Road shall be surfaced in impervious material.

Reasons:-

1. To help arrest the spread of Japanese Knotweed in the interests of environmental protection.
2. To ensure that all contamination issues are recorded and dealt with appropriately.
3. To protect receptors from the harmful effects of imported contamination.
4. To protect the amenities of occupiers of premises from unreasonable noise and vibration levels.
5. In recognition of the expected lifespan of the development and in the interests of safety and visual amenity once the plant is redundant.
6. In recognition of the expected lifespan of the development and in the interests of safety and visual amenity once the plant is redundant.
7. In the interests of visual amenity and landscape protection.
8. In the interests of road safety on Auchentiber Road
9. In the interests of road safety on Auchentiber Road.