Appendix A

Argyll and Bute Landscape Wind Energy Capacity Study

Executive Summary

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1. Introduction

1.1 This study jointly commissioned by Argyll and Bute Council and Scottish Natural Heritage aims to inform strategic planning for wind energy development in line with Scottish Planning Policy and in addition provide guidance on the appraisal of individual wind farm and wind turbine proposals in Argyll and Bute.

1.2 The study considers the sensitivity of landscape character types on the mainland of Argyll and Bute to wind turbines up to 130m height excluding National Scenic Areas (NSAs). The sensitivity of larger islands and NSAs within Argyll and Bute has also been assessed for wind turbines up to 50m height. Four types of windfarm development were considered in the sensitivity assessment, these are principally categorised on the basis of turbine height. The assessment considers key sensitivities related to landscape character, visual amenity and on the value placed on the landscape in the form of scenic designations and other recognised interests. The NSAs are assessed on the basis of their identified Special Qualities. The sensitivity assessment considers potential cumulative issues associated with existing and consented wind farm developments.

1.3 The study also provides guidance on the constraints and opportunities for wind energy development within each landscape character type/NSA together with guidance on the siting and design of small turbines below 50m height.

2. Study aims

2.1 The aim of the study is to identify landscape and visual sensitivities at a council wide scale for use in the consideration and determination of further proposals for wind farm developments in Argyll and Bute. Smaller wind turbine typologies have also been considered and an appraisal made of potential cumulative landscape and visual effects. Consideration has also been given to the existing pattern of wind energy development in Argyll and Bute and whether it is appropriate to continue this. The study will be used to inform the emerging spatial and criteria based policies of the Local Development Plan and the consequential development management decision making process in accordance with the requirements of SPP 2010 and Scottish Government Renewable Energy Planning Advice Notes (PANs).

2.2 It is important to stress that this capacity study considers only landscape and visual issues, a range of other environmental and technical issues will also be required to be considered in order to draw up a spatial framework and Supplementary Planning Guidance (SPG) for wind farm development.

2.3 This study covers all of mainland Argyll and Bute and the islands of Mull, Jura, Islay, Bute and Lismore. While other islands of Argyll and Bute have not been assessed in detail, where development proposals occur on these, the sensitivity assessment

relating to the relevant landscape character type defined in the Landscape assessment of Argyll and the Firth of Clyde (1996) could be referred to. This will include the following landscape character types which occur on the islands of Jura and Islay as well as other islands:

- Marginal farmland mosaic (16)
- Sand Dunes and Machair (25)
- Coastal Parallel Ridges (22)

2.4 The sensitivity assessments undertaken for the above landscape character types on Islay and Jura should however only be used to provide general information on the sensitivities on other islands as they do not take into account the specific context and local character associated with these. However, the guidance for the siting of small turbines set out in section 7 of the Main Study Report is relevant to these other islands.

3. General approach to the study

3.1 The study has been carried out by consultant landscape architects who were appointed jointly by Argyll and Bute Council and Scottish Natural Heritage. The work has involved a systematic approach to the consideration of landscape the key tasks involved were:

- Identifying existing, consented and proposed wind farm developments in Argyll and Bute and adjoining authorities to be considered in the study.
- Review of existing baseline landscape character studies for Argyll and Bute and adjoining areas and definition of landscape character types to be used as the basis for the study.
- Identifying wind farm and wind turbine development typologies to be assessed in the study.
- Defining the landscape and visual sensitivity criteria to be used in the assessment.
- Defining landscape values to be considered in the study in the form of designations and other recognised landscape and visual interests.
- Field work to assess the sensitivity of different landscape character types and National Scenic Areas to defined development typologies using identified sensitivity criteria.
- Developing guidance on the siting of smaller turbines informed by field work and generic guidance on the siting and design of wind energy development.
- Providing an overview of landscape and visual sensitivities across the region and recommendations on strategic landscape and visual considerations.

4. Baseline landscape character

4.1 This capacity study has principally been based on the landscape characterisation work set out in the Landscape assessment of Argyll and the Firth of Clyde (1996) undertaken by Environmental Resources Management for SNH. Review of this study was undertaken in the field and some revisions were made to landscape character types and their classification for the purposes of this capacity study.

4.2 Separate sensitivity assessments have been undertaken for the National Scenic Areas (NSAs) lying wholly within Argyll and Bute in accordance with the requirements of the study brief.

5. Development typologies

5.1 The following development typologies have been considered in the study:

- ***Large:*** Turbines between 80m to 130m height to blade tip
- ***Medium:*** Turbines between 50m and 80m to blade tip
- ***Small-medium:*** Turbines between 35-50m high
- ***Small:*** Turbines between 20-35m high.

5.2 In addition, extensions to existing wind farm developments have been considered and guidance within each sensitivity assessment provided, on the appropriate height of turbine and general extent of development that could be accommodated.

6. An overview of the Landscape of Argyll and Bute

6.1 The landscape of Argyll and Bute is notable for its diversity, featuring an extensive and deeply indented coastline of long peninsulas and sea lochs, associated seascapes including numerous islands of varying character and narrow settled loch fringes and coasts backed by upland plateaux and the rugged mountains to the east. The juxtaposition and contrast of character types within Argyll and Bute produces rich, multi-layered landscapes and high quality scenery, recognised in the National Scenic Areas (NSAs) and Areas of Panoramic Quality (APQs) that cover substantial parts of the area.

6.2 Argyll and Bute has a convoluted geography of peninsulas and islands, which can restrict inter-visibility between some parts of the region but also reveals surprising views from others. Main roads and settlements are predominantly aligned along loch shores and the coast, and views therefore tend to be restricted with immediate skylines, often seen across narrow lochs, forming the most prominent features in these low-level views. Views from roads also tend to be fairly well screened by extensive forestry and woodland or focus on the wider seascape within the more open fringes of the Kintyre Peninsula. Elevated views from roads are relatively rare although views from the sea and some islands allow greater visibility of the uplands backing narrow settled coastal fringes

6.3 The existing pattern of commercial wind farm development within Argyll and Bute is principally related to the more extensive and less settled upland character types of the 'Upland Forest Moor Mosaic' (6) and the 'Craggy Upland' (7) and to fairly limited sites within the 'Steep Ridgeland and Mountains' (1) character type and the 'Knapdale Upland Forest Moor Mosaic' (6b). In particular the larger wind farm developments are predominantly associated with the more extensive upland landscapes and generally have limited impact on adjacent smaller scale settled and more complex landscapes. No commercial wind farm developments are located within the settled loch and coastal

fringes, and islands of Argyll and Bute to date, although a single large 'community' turbine (75m) and smaller turbines below 50m high are sited on the islands of Tiree, Gigha and Luing.

7. Key findings of the sensitivity assessment

- The landscape wind farm capacity study has considered the sensitivity of landscape character types on the mainland of Argyll and Bute to wind turbines up to 130m height. The sensitivity of larger islands and NSAs within Argyll and Bute has also been assessed for wind turbines up to 50m height.

- The sensitivity assessment considered key sensitivities related to landscape character, visual amenity and on the value placed on the landscape in the form of scenic and other relevant landscape designations and recognised interests for each landscape character type/sub-type. A different approach has been taken for the NSAs where the identified special qualities of the designated landscape formed the principal basis for the sensitivity assessment.

- The Argyll and Firth of Clyde Landscape Character Assessment (1996) defined 25 different character types. The sensitivity assessment undertaken for this current study has involved sub-division of some of these landscape character types better reflecting local character and context and also potential cumulative issues in relation to operational and consented wind farm developments. Some minor alterations to the boundaries of some landscape character types and reclassifications have also been made.

- The operational and consented wind farm developments have been identified; the potential cumulative issues that may arise with these developments, and any additional turbine development, have been considered in relation to each landscape character type/NSA. The guidance following the summary of sensitivity provides recommendations for siting different development typologies in the landscape and, where relevant, potential constraints for development where there is a context of operational, consented and proposed wind farms.

7.1 Sensitivity to different development typologies was scored on a five point scale of High, High-medium, Medium, Medium-low and Low against landscape, visual amenity and landscape values categories. These ratings were based not on a numerical scoring system but rather used professional judgement in considering the weight of evidence in terms of sensitivities. An overall judgement of sensitivity for each landscape character type/NSA was then reached following consideration of landscape, visual and values ratings. A summary of the overall findings on sensitivity for the various scales of windfarm typologies is included as **Annexe A.**

7.2 For each of the five NSAs landscape sensitivity to wind turbines below 50m high was assessed, however, it was concluded that there was no scope for the small-medium typology (35-50m high) to be located within any of them, because of potential significant effects on the special qualities of these designated landscapes. There is

considered to be some very limited scope for the small typology to be accommodated in parts of these NSAs although a number of key constraints would apply.

7.3 Turbines below 20m relate better to the scale of woodlands, mature trees and buildings in more settled landscapes, and there are therefore fewer constraints associated with this typology in general. However there are some very sensitive landscapes where even turbines of this size could have impacts and these are identified in the detailed sensitivity assessments.

7.4 Caution is needed in interpreting the sensitivities set out for each landscape character type in the maps and summary appendix, as these represent an average across landscape character types. Considerable variation can occur across these landscapes and the detailed sensitivity assessments should referred to when considering specific development proposals. A landscape accorded 'Medium' sensitivity would have increased opportunities for wind farm/turbine development, although there would still be some constraints (including potential cumulative effects) which would be likely to restrict the geographic scope for development. 'Medium-low' and 'Low' sensitivity landscapes would have fewer constraints and therefore present greater scope for accommodating larger scale and possibly also multiple developments, although careful siting and design would still be necessary in order to mitigate impacts on more sensitive landscape features or limit visual intrusion in some instances.

8. Scope for larger turbines over 50m high

8.1 Landscapes with a combined sensitivity of medium and lower offer greatest scope to accommodate the large and medium development typologies while minimising significant impact on key landscape and visual sensitivities. This therefore excludes landscape character types with a combined High or High-medium sensitivity where constraints are likely to result in significant adverse landscape and visual impacts on key characteristics or where scope for development is limited to a very small part of the character type. Landscape character types of lower sensitivity are shown on Figures 11 and 12 for the large and medium scale typologies respectively. These maps should be used with caution however as the overall sensitivity rating is indicated uniformly for each landscape character type without key constraints identified in the sensitivity assessment being accounted for. It is therefore essential that the full sensitivity assessment is reviewed when considering individual developments.

9. Cumulative issues in areas with scope for larger turbines over 50m high

9.1 The sensitivity assessment found that the uplands within Argyll and Bute were of lowest landscape and visual sensitivity. These areas include the 'Craggy Uplands' (7) and 'Upland Forest Moor Mosaic (6) which offer greatest scope for the large typology. Both these landscape character types already feature operational and consented wind farm developments. Cumulative impacts are a potential constraint and these are considered in further detail within the Kintyre Peninsula, Loch Awe and Loch Fyne areas below.

The Kintyre Peninsula

9.2 Potential cumulative effects principally occur from the sea and from Arran. Locating further wind farm development well back from the coastal edge, avoiding higher hills on the peninsula and also limiting turbine heights will minimise significant effects on adjacent settled glens and coasts on the Kintyre Peninsula but also reduce visual impact on views from the sea and Arran. It is important that the majority of the skyline of the peninsula should remain open with wind farm developments occupying confined and lower sections of the ridge thus minimising the dominance of development. There is some limited scope for both extensions to the better sited wind farm developments and for clearly separate new wind farm(s) given the extent of this character type and its landscape and visual sensitivities. Proposals for extensions should aim to replicate similar turbine heights and retain the integrity of layout of the original scheme.

The Loch Awe area

9.3 The Loch Awe area is sparsely settled and views from the narrow roads which are predominantly aligned along the loch shore tend to be contained and are often screened by woodland/forestry. The immediate skyline of hills edging the loch is a prominent feature where rare open views occur. Provided that turbines were set well back away from the immediate 'edge' hills and into the interior of the 'Craggy Upland' (7) plateau, it is considered that significant cumulative landscape and visual impacts would be minimised in the Loch Awe area. Extensions to operational and consented developments would be likely to reduce sequential cumulative visual impacts from roads along Loch Awe (and limit impact on the more sensitive loch 'ends') by consolidating the existing pattern and spatial arrangement of development although the height of additional turbines needs careful consideration in relation to older operational wind farms and reduction of visual prominence from roads and settlement.

The Loch Fyne area

9.4 The narrow inner loch and broader outer loch (generally south of Lochgilphead) are visually separate in terms of their relative containment and orientation of views. This appraisal therefore considers potential cumulative impacts within these two parts of the loch.

9.5 Within the inner loch (north of Lochgilphead) a number of character types are visible from roads and settlement. The sensitivity assessment found some limited scope for the large typology (turbines >80m) to be accommodated within the 'Craggy Upland' (7) and also limited scope for the medium typology (turbines 50-80m) to be accommodated in the 'Loch Fyne Upland Forest Moor Mosaic' (6a). The eastern side of the inner loch forms a narrow strip of fairly even inward-facing hill slopes rising to a distinct ridge bordering the Kyles of Bute NSA and the 'Steep Ridgeland and Mountains' (1) and thus increasing visual sensitivity. The western side comprises a more extensive gently undulating upland plateau where the 'Loch Fyne Upland Forest Moor Mosaic' (6a) and the 'Craggy Upland' (7) merge and is less sensitive. The existing/consented A' Chruach and An Suidhe wind farms are located in this western area. Views from roads across and along the inner loch are restricted by extensive woodland cover and these wind farms are/will be seen relatively briefly. Their location set back into the more extensive and distant uplands, and occupying confined parts of the skyline, minimises effects on views and on the smaller scale settled loch fringes. These wind farms are widely spaced and there may be some limited scope to locate

further development within these more extensive uplands on the western side of the inner loch (and given other landscape and visual constraints identified in the sensitivity assessment) while minimising cumulative landscape and visual effects.

9.6 Within outer Loch Fyne, the 'Knapdale Upland Forest Moor Mosaic' (6b) occurs to the west with the 'Upland Forest Moor Mosaic' (6) of the Kintyre Peninsula bordering the far southern reaches of the loch to Skipness Point. The sensitivity assessment found some limited scope for the medium typology (turbines 50-80m) within the 'Knapdale Upland Forest Moor Mosaic' (6b) but identified the more defined higher hills, which are seen from Loch Fyne, as a key constraint to development in this character type. The Skipness to Tarbert coast which lies within the 'Upland Forest Moor Mosaic' (6) is also defined as a significant constraint to development in the sensitivity assessment due to its qualities of wildness which would be compromised by development seen in views to and from this coastal area. The settled eastern fringes of Loch Fyne are defined as 'Rocky Mosaic' (20) and are backed by the higher ground of the 'Loch Fyne Upland Forest Moor Mosaic' (6a). The more complex landform north of Portavadie within the 'Loch Fyne Upland Forest Moor Mosaic' (6a), and the proximity of this character type in this area to the Kyles of Bute NSA, increases sensitivity and limits scope for development on the eastern side of outer Loch Fyne.

9.7 The consented Allt Dearg wind farm is located in the 'Knapdale Upland Forest Moor Mosaic' (6b) and will be prominent in views from both the western parts of the inner loch and the outer loch. It lies some distance from the consented A' Chruach wind farm (approximately 24km) and there would be limited cumulative effects in terms of sequential visibility from the B8000 and the A83 due to the rarity of open views because of woodland screening and the wide spacing of existing/consented wind farms visible from both inner and outer Loch Fyne. The presence of significant constraints identified within the landscapes bordering the outer loch therefore principally restricts scope for the development of larger typologies rather than any potential cumulative effects that may arise with consented wind farms.

10. Cumulative issues associated with smaller turbines below 50m high

10.1 The majority of current applications for turbines below 50m tend to be in the more settled coastal landscapes and islands of Argyll and Bute. The sensitivity assessment concluded that the small-medium typology (turbines 35- 50m high) could be accommodated in limited parts of more settled coastal landscapes and islands. Many of these areas have an even dispersal of relatively small farms/crofts and other developments. Capacity would be quickly reached if even a small number of these were to feature a turbine of this height, with multiple turbines in close proximity likely to overwhelm landscape features. While the constraints identified in the sensitivity assessment should limit scope for this size of turbine, directing turbines of this size to more extensive hill slopes set back from more sensitive lowland areas will limit landscape and visual impacts. It will also reduce the potential for cumulative landscape and visual impacts to occur between different sizes and designs of turbines, in areas where there is more likely to be demand for 'Feed-in Tariff' related development.

10.2 Monitoring of potential cumulative effects arising from smaller turbines will be kept under review, and consideration should be given to the detailed design of smaller

turbines, in order to prevent widely varying designs leading to visual clutter in some landscapes.

11. Designated landscapes

11.1 The assessment has considered the special qualities of designated landscapes in determining sensitivity to different development typologies. The NSAs, as nationally important landscapes, are afforded significant protection within a spatial framework for wind farm development in terms of SPP. Accordingly the sensitivity assessment only considered smaller turbines below 50m high. It concluded that small turbines below 35m would have less of an effect on some NSAs provided these were sensitively sited.

11.2 Many of the APQs are important in providing a wider landscape setting to the much more closely defined NSAs and this role, together with their special qualities, has been considered in the assessment. As the sensitivity assessment in relation to these regional designations has not been as straightforward as that undertaken for the NSAs, the more detailed sensitivity tables set out in the Appendix Report should be consulted when considering specific development proposals.

12. A recommended landscape strategy

- ***Protection of the most scenic of Argyll and Bute's landscapes*** by directing larger typologies away from designated landscapes and avoiding intrusion on Inventory listed designed landscapes.
- ***Maintaining the wildland qualities of the mountainous landscapes*** by directing wind farm development away from these areas and avoiding developments that could impact on the wider landscape setting and appreciation of these landscapes. Cumulative landscape and visual effects of wind farm development in surrounding landscapes will need to be carefully considered in terms of potential effects on the perception of wildness and on views from popularly accessed hills.
- ***Protect the special qualities of the coastal landscapes, islands and wider seascape*** which form an essential part of the character of Argyll and Bute, by resisting larger scale developments in the complex coastal landscapes and where they could intrude on views from roads, settlement and recreational areas (including from the sea).
- ***Follow the established pattern of larger wind farm development associated with less sensitive upland landscapes*** where their more extensive scale can better accommodate, and provide an appropriate wider setting, to large developments. Impacts on adjacent more sensitive smaller scale settled landscapes should be minimised by setting development well back into the upland interior and also considering limitations in the height of turbines. This strategy consolidates the established association of larger typologies with a particular landscape character, minimising cumulative impacts that could occur where different sizes and designs of turbines are sited in all landscapes.
- ***Direct larger typologies away from settled coastal and loch fringes*** as these are striking in the rich variety of landscapes, frequent small scale topography, complex

landforms and intricate patterns of settlement and land use. Limit intrusion by setting smaller turbines (below 50m) well back from sensitive loch edges within the ‘Rocky Mosiac’ (20) and at the transition with the more extensive simpler upland landscapes. Smaller turbines would form more of an incidental feature in these sensitive landscapes while larger turbines would dominate and detract.

- ***Ongoing review of cumulative landscape and visual effects of multiple wind turbine developments*** will be necessary to ascertain when capacity is close to being reached. This will particularly apply to the ‘Craggy Upland’ (7) in terms of key views from Loch Awe and Loch Fyne and the ‘Upland Forest Moor Mosaic’ (6), principally in terms of views from Arran.

Annexe A: Summary of sensitivity for character type assessments

Landscape type	***Development typology***	***Sensitivity assessment***			***Overall Sensitivity***
		Landscape	*Visual*	*Values*	
1.Steep Ridgeland and Mountains	large	H	H	HM	**H**
	medium	H	H	HM	**H**
2. High Tops	large	H	H	H	**H**
	medium	H	H	H	**H**
2a Mull High Tops	small-medium	H	H	HM-L	**H**
	small	HM	HM	M-L	**HM**
3, 4 Hidden and Mountain Glens	small-medium	H	H	HM-L	**H**
	small	HM	HM	HM-L	**HM**
5. Open Ridgeland	large	H	H	HM-L	**H**
	med	HM	H	HM-L	**HM**
	Small-med	M	HM	M-L	**M**
	small	ML	M	M-L	**ML**
5a. Bute Open Ridgeland	Small-medium	HM	HM	HM	**HM**
	small	M	M	M	**M**
6. Upland Forest Moor Mosaic	large	M	HM	L	**M**
	medium	ML	M	L	**ML**
6a. Loch Fyne Upland Forest Moor Mosaic	large	HM	H	HM-L	**HM**
	medium	HM	HM	HM-L	**HM**
6b. Knapdale Upland Forest Moor Mosaic	large	HM	HM	HM-L	**HM**
	medium	M	M	HM-L	**M**
6c. Mull of Kintyre Upland Forest Moor Mosaic	large	HM	H	HM-L	**HM**
	medium	M	HM	M-L	**M**
7. Craggy Upland	large	M	HM	L	**M**
	medium	M	M	L	**M**
7a. Craggy Upland with Settled Glens	large	H	H	HM-L	**H**
	medium	HM	HM	HM-L	**HM**
	small-medium	M	M	HM-L	**M**
	small	M	M	M-L	**M**
7b. Craggy Coast and Islands	large	H	H	HM	**H**
	medium	H	H	HM	**H**
	small-med	HM	H	HM	**HM**
	small	M	HM	M	**M**
7c. North Loch Awe Craggy Upland	large	H	H	HM	**H**
	medium	HM	H	HM	**HM**
7d. Lorn Craggy Upland	large	H	H	HM	**H**
	medium	H	H	HM	**H**
7e. Mull Craggy Upland	small-medium	HM	HM	HM-L	**HM**
	small	M	M	M-L	**M**
8. Moorland Plateau	small-medium	HM	M	HM-L	**HM**
	small	M	ML	HM-L	**M**
8a. Moorland Plateau with Farmland	small-medium	HM	HM	HM-L	**HM**
	small	M	M	M-L	**M**
9. Rocky Moorland	small-medium	M	HM	HM-L	**HM**
	small	M	M	M-L	**M**
10. Upland Parallel Ridges	large	H	H	HM to L	**H**
	medium	HM	HM	HM to L	**HM**
11. Boulder Moors	small-medium	HM	H	HM	**HM**
	small	M	HM	M	**M**

12 High Stepped Basalt	small-medium	M	HM	HM-L	**M**
	small	M	M	M-L	**M**

13. Rolling Farmland with Estates	large	H	H	HM-L	**H**
	medium	H	H	HM-L	**H**
	small-med	HM	H	HM-L	**HM**
	small	M	HM	M-L	**M**
13a. Bute Rolling Farmland with Estates	small-medium	HM	H	HM	**HM**
	small	M	M	M	**M**
14. Bay Farmland	large	HM	H	L	**HM**
	medium	HM	H	L	**HM**
	small-med	M	HM	L	**M**
	small	ML	M	L	**ML**
15 Lowland Bog and Moor	small-medium	M	HM	L	**M**
	small	M	M	L	**M**
15a. Less extensive Lowland Bog and Moor	small-medium	H	H	L	**H**
	small	H	H	L	**H**
16. Marginal Farmland Mosaic	small-medium	H	HM	L	**HM**
	small	HM	M	L	**M**
17. Mull Basalt Lowlands	small-medium	HM	HM	HM-L	**HM**
	small	M	M	M-L	**M**
17a. Bute Basalt Lowlands	small-medium	H	H	HM	**H**
	small	HM	HM	M	**HM**
18. Lowland Ridges and Moss	large	H	H	HM-L	**H**
	medium	H	H	HM-L	**H**
	small-medium	H	H	HM-L	**H**
	small	HM	HM	M-L	**HM**
19. Kintyre Coastal Plain	large	H	H	HM	**H**
	medium	H	H	HM	**H**
	small-medium	HM	H	HM	**HM**
	small	M	HM	M	**M**
19a. Bute Coastal Plain	small-medium	H	H	HM	**H**
	small	HM	HM	M	**HM**
20. Rocky Mosaic	large	H	H	HM to L	**H**
	medium	H	H	HM to L	**H**
	small-medium	HM	HM	HM to L	**HM**
	small	M	M	M to L	**M**
21. Low Coastal Hills	large	H	H	HM	**H**
	medium	H	HM	HM	**H**
	small-medium	HM	HM	HM	**HM**
	small	M	M	M	**M**
22. Coastal Parallel Ridges	Small-medium	HM	HM	HM	**HM**
	small	M	M	HM	**M**
23. Flat Moss and Mudflats	small-medium	H	H	H	**H**
	small	HM	H	HM	**HM**
25. Sand Dunes and Machair	Small-medium	H	H	HM	**H**
	small	H	H	HM	**H**