



**Marubeni**



# **Appendix 14.1, Annex A: Aviation, Military and Communications Instrument Flight Procedure Assessment**

**Array EIA Report  
2024**



# Aberdeen Airport IFP Safeguarding – Ossian Array

## Safeguarding of Instrument Flight Procedures

Date: 08/04/2024

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Rev03

Osprey Ref: 71731-001

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## Document Details

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Reference	Description
<b>Document Title</b>	Aberdeen Airport IFP Safeguarding – Ossian Array
	Safeguarding of Instrument Flight Procedures
<b>Document Ref</b>	71731-001
<b>Issue</b>	Rev03
<b>Date</b>	08/04/2024
<b>Client Name</b>	Ossian Offshore Wind Farm Ltd (OWFL)
<b>Classification</b>	Commercial in Confidence

Issue	Amendment	Date
Rev03	Final	08/04/2024

Approval Level	Authority	Name
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# Executive Summary

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Osprey CSL have been commissioned by Ossian Offshore Wind Farm Ltd (OWFL) to assess the potential impact of the wind turbines only within the Ossian Array for the proposed Ossian offshore wind farm development, comprising wind turbines at an elevation of up to 399 m Above Mean Sea Level (AMSL), on the Obstacle Limitation Surfaces (OLS) and Instrument Flight Procedures (IFPs) that serve Aberdeen Airport.

The findings are as follows:

## **OLS**

**The proposed Ossian Array will have no effect on the Obstacle Limitation Surfaces (OLS) for Aberdeen Airport.**

## **IFPs**

**The proposed Ossian Array will have no effect on the published Instrument Flight Procedures (IFPs) for Aberdeen Airport.**

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# 1 Introduction

## 1.1 Background

Osprey CSL have been commissioned by Ossian Offshore Wind Farm Ltd to assess the potential impact of the proposed Ossian Array (hereafter referred to as the “Array”) comprising of wind turbines at an elevation of up to 399 m Above Mean Sea Level (AMSL) on the Obstacle Limitation Surfaces (OLS) and Instrument Flight Procedures (IFPs) that serve Aberdeen Airport.

## 1.2 Scope of the Assessment

This report assesses the wind turbines within the Array in relation to the OLS and IFPs and has been completed with the use of Aberdeen Airport’s AD 2 – EGPD sourced from the UK Integrated Aeronautical Information Package (IAIP), Aeronautical Information Regulation and Control (AIRAC) 03/2024, effective date 21 March 2024.

## 1.3 Proposed Array Location & Details

The boundary coordinates of the Array were provided by Ossian OWFL via email. They were provided in Decimal Degrees (dd) and so to be imported into AutoCAD, they were converted to Degrees Minutes Seconds (DDMMSS) in Microsoft Excel.

Lease Boundary Coordinates	Latitude (dd)	Longitude (dd)	Latitude (DDMMSS)	Longitude (DDMMSS)
1	56.58654	0.04322	563511.5440N	0000235.5920E
2	56.58275	0.04806	563457.9000N	0000253.0160E
3	56.572	0.0124	563419.2000N	0000044.6400E
4	56.57173	0.01151	563418.2280N	0000041.4360E
5	56.5722	0.00837	563419.9200N	0000030.1320E
6	56.57357	-0.00094	563424.8520N	0000003.3840W
7	56.58313	-0.06553	563459.2680N	0000355.9080W
8	56.5892	-0.12231	563521.1200N	0000720.3160W
9	56.58596	-0.17444	563509.4560N	0001027.9840W
10	56.56181	-0.19301	563342.5160N	0001134.8360W

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<b>Lease Boundary Coordinates</b>	<b>Latitude (dd)</b>	<b>Longitude (dd)</b>	<b>Latitude (DDMMSS)</b>	<b>Longitude (DDMMSS)</b>
11	56.56174	-0.19307	563342.2640N	0001135.0520W
12	56.55637	-0.1972	563322.9320N	0001149.9200W
13	56.51718	-0.21434	563101.8480N	0001251.6240W
14	56.51277	-0.24677	563045.9720N	0001448.3720W
15	56.50682	-0.29055	563024.5520N	0001725.9800W
16	56.49471	-0.37963	562940.9560N	0002246.6680W
17	56.57941	-0.45153	563445.8760N	0002705.5080W
18	56.59024	-0.46266	563524.8640N	0002745.5760W
19	56.59316	-0.46567	563535.3760N	0002756.4120W
20	56.66699	-0.54206	564001.1640N	0003231.4160W
21	56.68692	-0.56268	564112.9120N	0003345.6480W
22	56.78023	-0.67229	564648.8280N	0004020.2440W
23	56.8113	-0.73079	564840.6800N	0004350.8440W
24	56.84298	-0.79043	565034.7280N	0004725.5480W
25	56.86017	-0.82281	565136.6120N	0004922.1160W
26	56.86452	-0.83099	565152.2720N	0004951.5640W
27	56.86901	-0.82285	565208.4360N	0004922.2600W
28	56.88182	-0.79964	565254.5520N	0004758.7040W
29	56.88212	-0.7991	565255.6320N	0004756.7600W
30	56.90426	-0.76842	565415.3360N	0004606.3120W
31	56.90418	-0.76811	565415.0480N	0004605.1960W
32	56.87739	-0.65951	565238.6040N	0003934.2360W
33	56.86354	-0.60336	565148.7440N	0003612.0960W

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<b>Lease Boundary Coordinates</b>	<b>Latitude (dd)</b>	<b>Longitude (dd)</b>	<b>Latitude (DDMMSS)</b>	<b>Longitude (DDMMSS)</b>
34	56.82223	-0.48837	564920.0280N	0002918.1320W
35	56.79935	-0.42468	564757.6600N	0002528.8480W
36	56.77358	-0.36948	564624.8880N	0002210.1280W
37	56.74374	-0.30555	564437.4640N	0001819.9800W
38	56.7239	-0.26303	564326.0400N	0001546.9080W
39	56.7239	-0.26303	564326.0400N	0001546.9080W
40	56.71211	-0.23778	564243.5960N	0001416.0080W
41	56.69343	-0.16504	564136.3480N	0000954.1440W
42	56.66601	-0.05825	563957.6360N	0000329.7000W
43	56.59135	0.03707	563528.8600N	0000213.4520E

Table 1 – Array Coordinate Conversion

As Ossian is a floating offshore wind farm, the maximum elevation of the wind turbines and blades are affected by the tides. The maximum blade tip height has been provided as 395 m at Lowest Astronomical Tide (LAT) and 399 m at Highest Astronomical Tide (HAT). The value of 399 m AMSL for the turbines will be used as the most limiting and was assumed to be the elevation over the entire area of the Array.

## 1.4 Copyright

Background imaging used in this report is from Google Earth Pro:

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## 1.5 Orientation

The Array is approximately 90.4 km East of Aberdeen Airport:



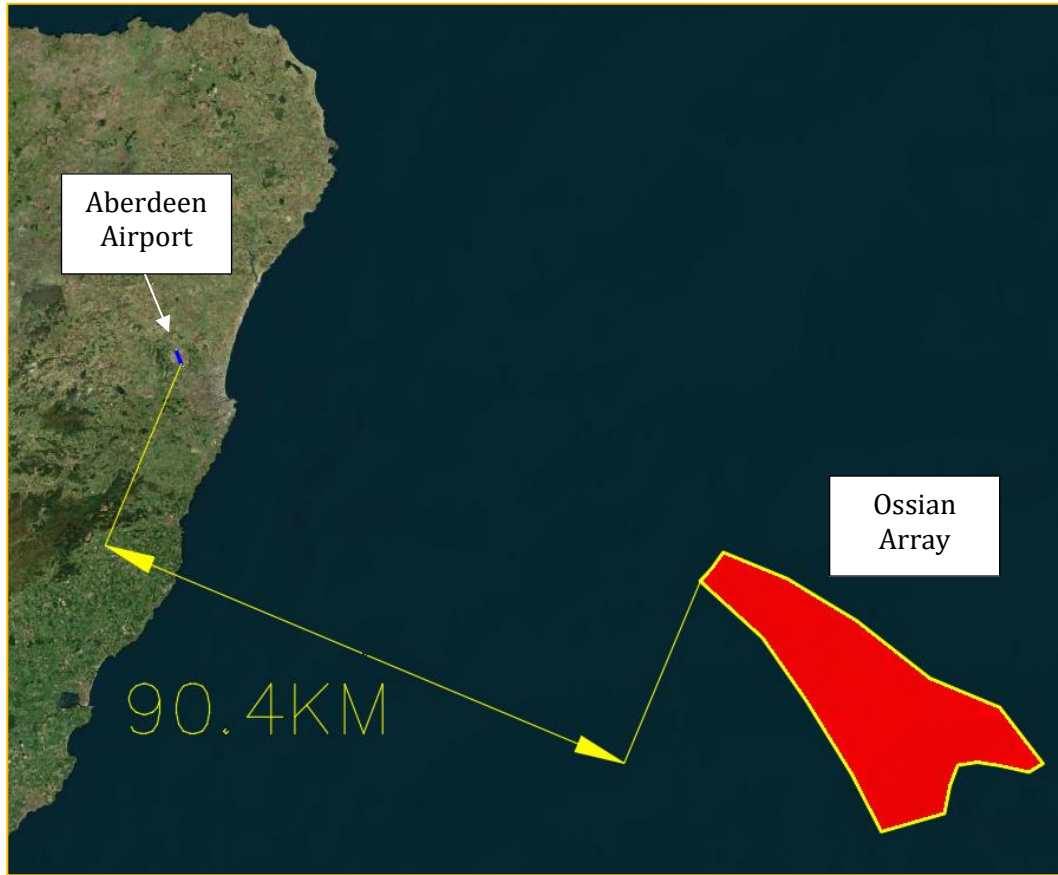


Figure 1 – Location of the Array in Relation to Aberdeen Airport

## 2 Instrument Flight Procedure (IFP) Assessment

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### 2.1 IFP Assessment

The Air Traffic Control Surveillance Minimum Altitude Chart (ATCSMAC) and IFPs assessed are as follows:

AIRAC 03/2024 Effective 21 MARCH 2024.

- AD 2.EGPD-5-1 ATC SURVEILLANCE MINIMUM ALTITUDE CHART (24 FEBURARY 2022);
- AD 2.EGPD-5-2 ATC SURVEILLANCE MINIMUM ALTITUDE TEXT (03 MARCH 2016);
- AD 2.EGPD-8-1 ILS/DME RWY 16 (07 SEPTEMBER 2023);
- AD 2.EGPD-8-2 LOC/DME RWY 16 (07 SEPTEMBER 2023);
- AD 2.EGPD-8-3 VOR/DME RWY 16 (07 SEPTEMBER 2023);
- AD 2.EGPD-8-4 ILS/DME RWY 34 (07 SEPTEMBER 2023);
- AD 2.EGPD-8-5 LOC/DME RWY 34 (07 SEPTEMBER 2023);
- AD 2.EGPD-8-6 VOR/DME RWY 34 (07 SEPTEMBER 2023);
- AD 2.EGPD-8-7 NDB(L)/DME RWY 34 (07 SEPTEMBER 2023).

### 2.1.1 ATCSMAC

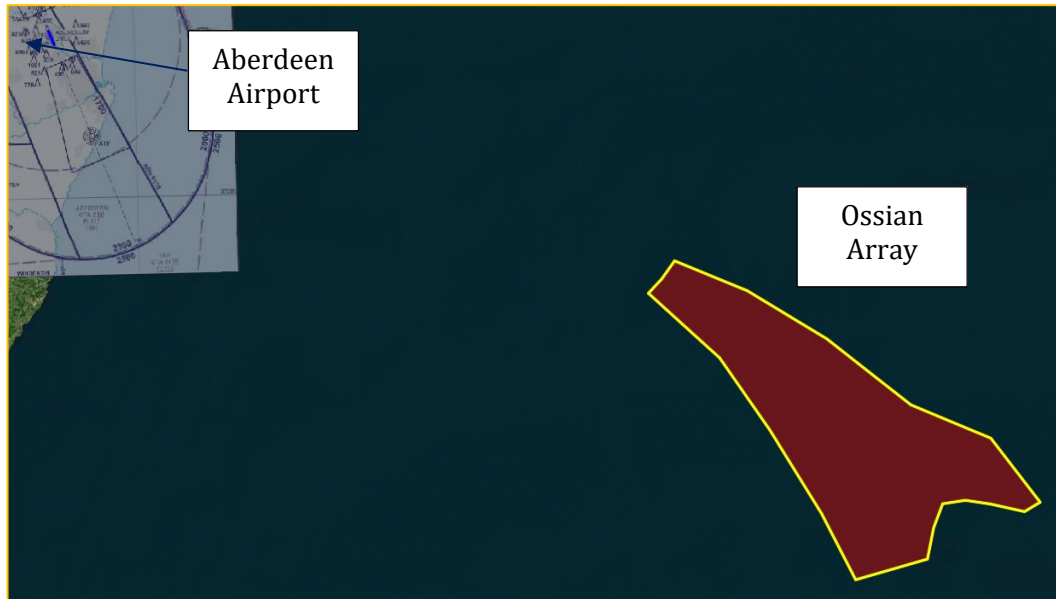


Figure 2 – ATCSMAC

The Array lies outside of the lateral buffer of the ATSMAC.

As identified in Section 2.1.11 the Array is also outside of the lateral extent of the Minimum Sector Altitude (MSA).

**There will be no effect on the ATSMAC.**

### 2.1.2 ILS RWY 16

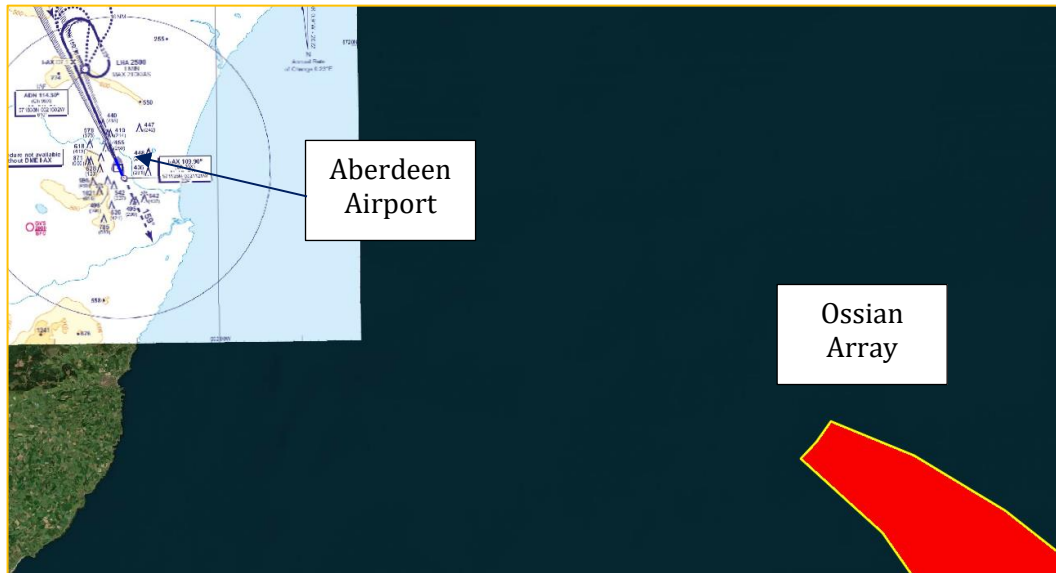


Figure 3 – ILS RWY 16

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The Array lies outside the lateral confines of the Obstacle Assessment Surfaces (OAS) for the Instrument Landing System (ILS), as well as outside the Missed Approach Areas and the Initial Approach Segment Areas (including the racetrack and the alternative base-turn initial segment).

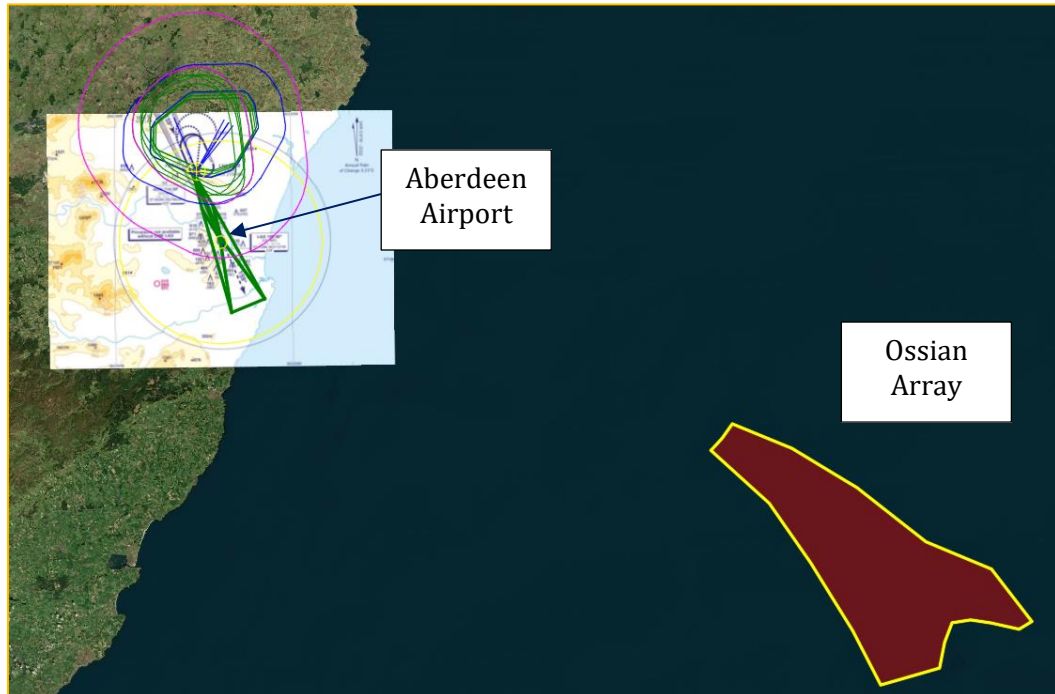


Figure 4 – ILS RWY 16 OAS Surfaces and Protection Areas

**There will be no effect on the ILS RWY 16 procedure.**

### 2.1.3 LOC RWY 16

See Section 2.1.2.

The Array lies outside the lateral confines of the OAS for the ILS, which establish the lateral boundaries of the protection areas used for the Localiser (LOC). The Array is also outside the Missed Approach Areas and the Initial Approach Segment Areas (including the racetrack and the alternative base-turn initial segment).

**There will be no effect on the LOC RWY 16 procedure.**

## 2.1.4 VOR/DME RWY 16



Figure 5 – VOR/DME RWY 16

The Array lies outside the lateral confines of the Final Approach Areas for the Very High Frequency Omni Range (VHFOR) system splay, as well as outside the Missed Approach Areas and the Initial Approach Segment Areas (including the racetrack and the alternative base-turn initial segment).

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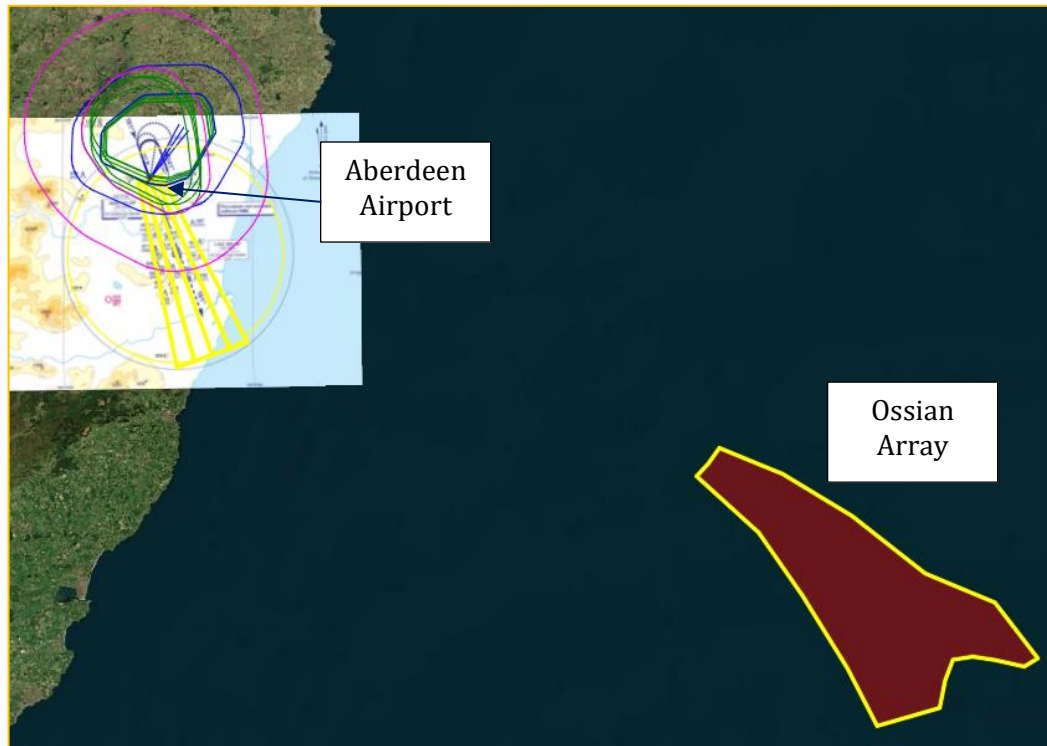


Figure 6 – VOR/DME RWY 16 Protection Areas

**There will be no effect on the VOR/DME RWY 16 procedure.**

### 2.1.5 ILS RWY 34



Figure 7 – ILS RWY 34

The Array lies outside the lateral confines of the OAS for the ILS, as well as outside the Missed Approach Areas and the Initial Approach Segment Areas (including the racetrack and the alternative base-turn initial segment).

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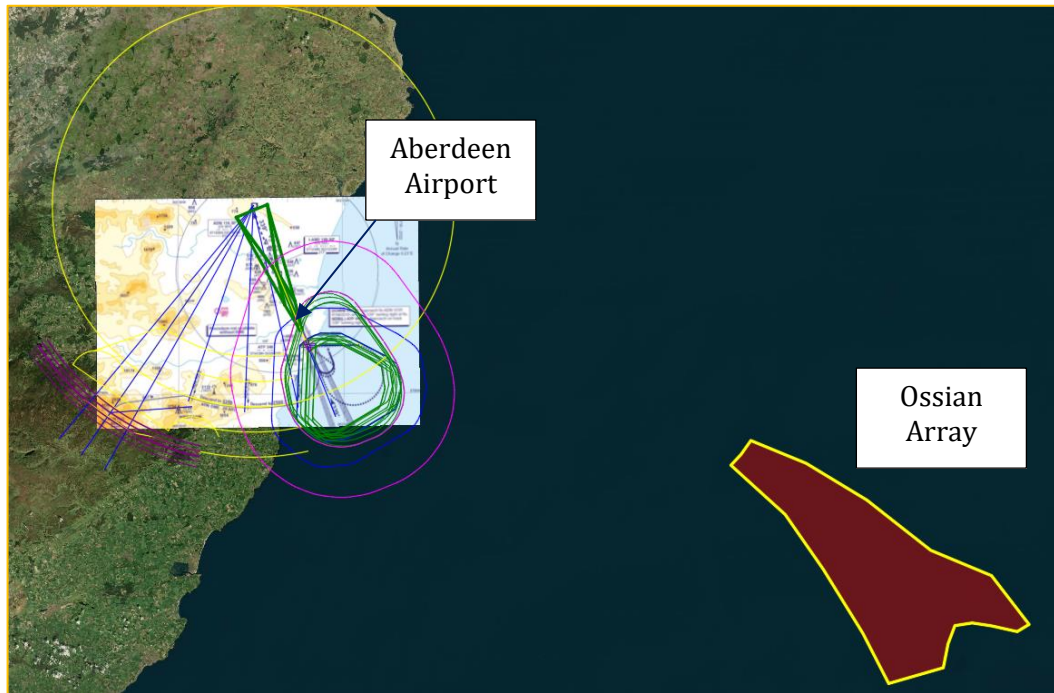


Figure 8 – ILS RWY 34 OAS Surfaces and Protection Areas

**There will be no effect on the ILS RWY 34 procedure.**

#### 2.1.6 LOC RWY 34

See Section 2.1.5.

The Array lies outside the lateral confines of the OAS for the ILS, which establish the lateral boundaries of the protection areas used for the LOC. The Array is also outside the Missed Approach Areas and the Initial Approach Segment Areas (including the racetrack and the alternative base-turn initial segment).

**There will be no effect on the LOC RWY 34 procedure.**

2.1.7 VOR/DME RWY 34



Figure 9 – VOR/DME RWY 34

The Array lies outside the lateral confines of the Final Approach Areas for the VHFOR splay, as well as outside the Missed Approach Areas and the Initial Approach Segment Areas (including the racetrack and the alternative base-turn initial segment).

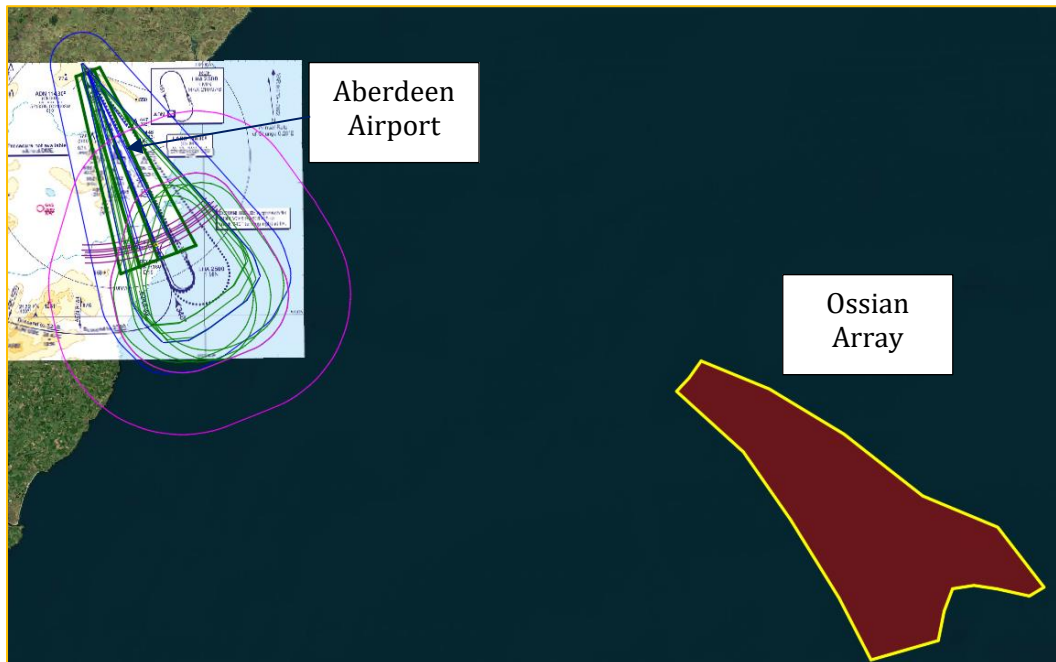


Figure 10 – VOR/DME RWY 34 Protection Areas

**There will be no effect on the VOR/DME RWY 34 procedure.**



**2.1.8 NDB(L)/DME RWY 34**



Figure 11 – NDB(L)/DME RWY 34

The Array lies outside the lateral confines of the Final Approach Areas for the Non-Directional Beacon (NDB) splay, as well as outside the Missed Approach Areas and the Initial Approach Segment Areas (including the racetrack and the alternative base-turn initial segment).

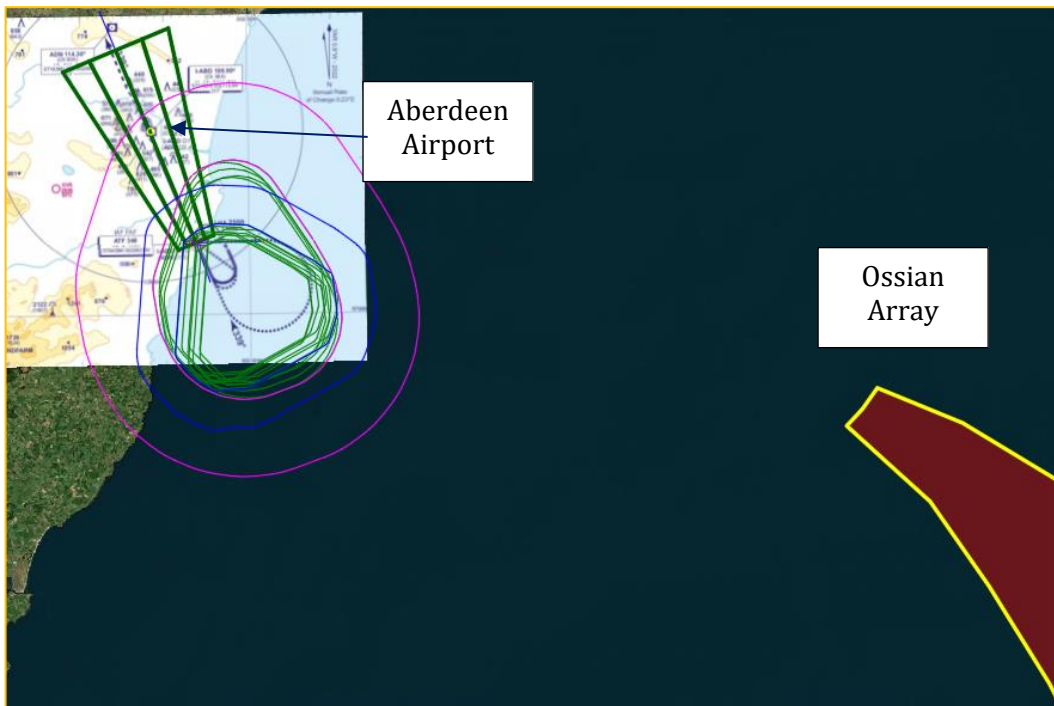


Figure 12 – NDB(L)/DME RWY 34 Protection Areas

**There will be no effect on the NDB(L)/DME RWY 34 procedure.**

### 2.1.9 Circling



Figure 13 – Circling

The Array lies outside the lateral confines of the circling areas for Aircraft Categories A, B, C and D.

**The Array would not affect the Circling Minima.**

### 2.1.10 Holding

As analysed in the Instrument Approach Procedures, the Array lies outside all the holding / racetrack protection areas and their associated buffers – **therefore would not affect any of the Holdings for Aberdeen Airport.**

### 2.1.11 Minimum Sector Altitude (MSA)

The Array lies outside of the lateral extent of the MSA (ARP), MSA NDB (ATF) and MSA VOR (ADN) areas:

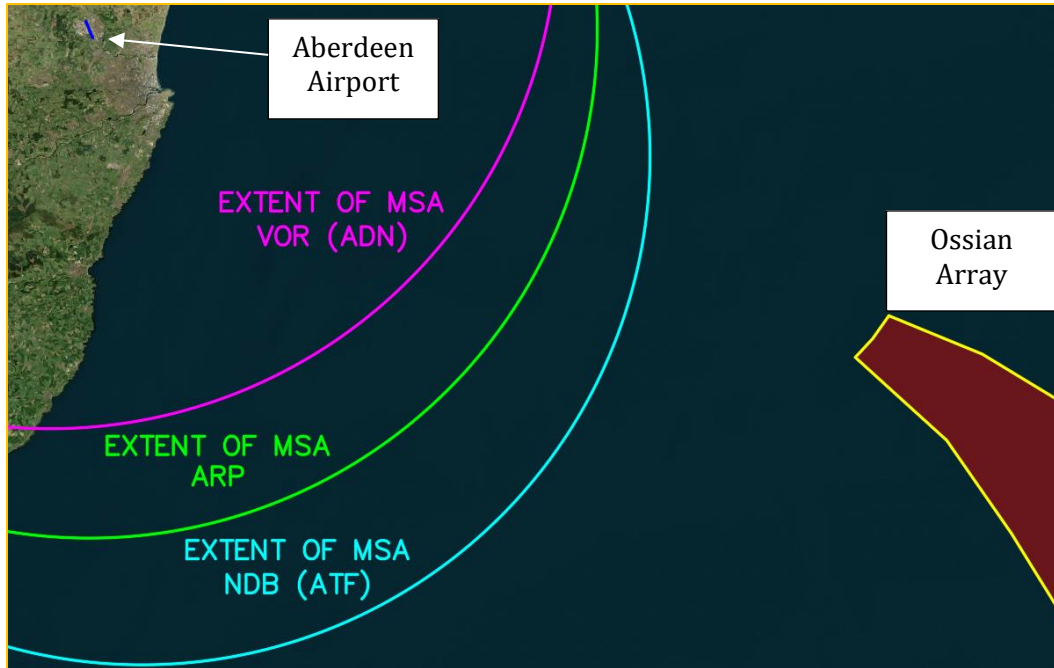


Figure 14 - MSAs

**The Array would not affect the ARP MSA.**

**The Array would not affect the VOR ADN MSA.**

**The Array would not affect the NDB(L) ATF MSA.**

### 2.1.12 Visual Segment Surface

The Array lies outside the obstacle protection areas associated with the Visual Segment Surfaces.

**There will be no effect on the Visual Segment Surfaces.**

## 3 Obstacle Limitation Surfaces (OLS)

### 3.1 OLS Assessment

The Array lies outside of the lateral extent of all the OLS areas:

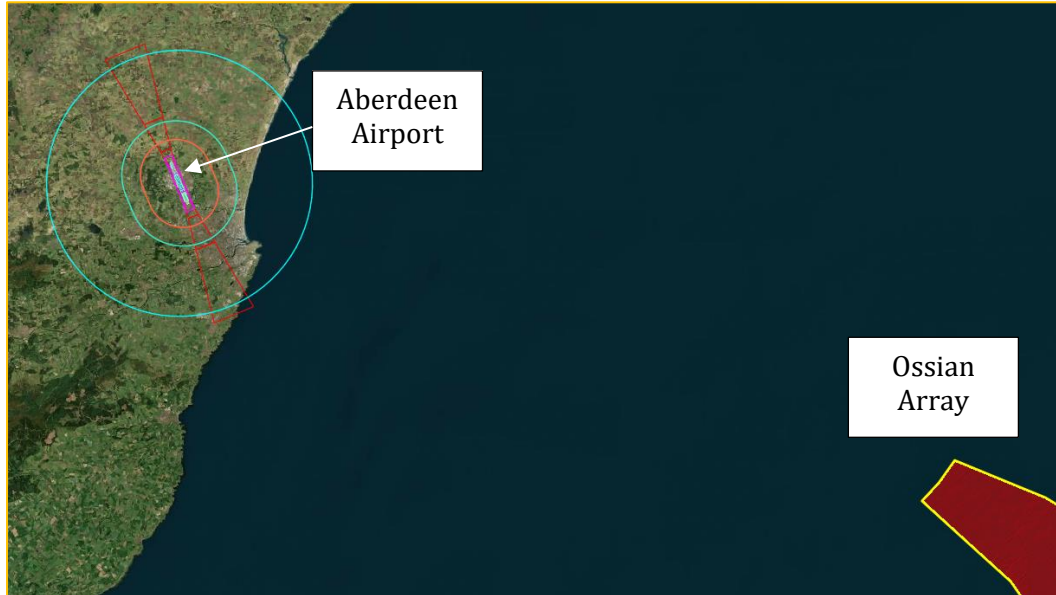


Figure 15 – OLS

**There will be no effect on the OLS.**

## 4 Summary

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**The wind turbines of the proposed Ossian Array will have no effect on the Obstacle Limitation Surfaces (OLS) or published Instrument Flight Procedures (IFPs) for Aberdeen Airport.**

# Ossian



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