### Title of Airspace Change Proposal
Walney Transponder Mandatory Zone (TMZ) – Airspace Change Proposal

### Change Sponsor
DONG Energy Walney Extension UK Ltd (DONG Energy) – assisted by Osprey Consulting Services Ltd

### SARG Project Leader
[Redacted]

### Case Study commencement date
9 February 2015

### Case Study report as at
1 May 2015

### Report Reference
SARG/ERCD/AG/Walney TMZ

### Instructions
In providing a response for each question, please ensure that the ‘Status’ column is completed using the following options:

- Yes
- No
- Partially
- N/A

To aid the SARG Project Leader’s efficient Project Management it may be useful that each question is also highlighted accordingly to illustrate what is resolved (Green), not resolved (Amber) or not compliant (Red) as part of the SARG Project Leader’s efficient project management.
1. **Introduction**

This report describes the environmental considerations relevant to DONG Energy’s (DONG) plans to develop an extension to the existing operational Walney Offshore Wind Farm in the Irish Sea. It will cover an area of 145 km² and have an estimated generating capacity of up to 750 Mega Watts (MW). The project development site will be located west of the operational wind farms, approximately 33 km (17.8 Nautical Miles (NM)) northwest of the Fleetwood and Blackpool coast, and 31 km (16.7 NM) east from the Isle of Man. The Airspace Change Proposal (ACP) has been submitted by Osprey Consulting on behalf of the sponsor, DONG.

This assessment is based upon information presented in the proposal document entitled “Walney TMZ – Airspace Change Proposal” (Issue 1, 6th February 2015), plus associated consultation material and subsequent information received as the result of queries raised with the sponsor following submission of the ACP.

2. **Guidance to the CAA**

<table>
<thead>
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<th>2.1</th>
<th>Is the proposal consistent with Government policy and/or guidance from Government to the CAA?</th>
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<td></td>
<td>Guidance issued to the Civil Aviation Authority sets out a framework for the environmental objectives that the CAA must consider when assessing airspace change proposals. In addition to these objectives, there may be other legitimate operational objectives, such as the overriding need to maintain an acceptable level of air safety, the desire for sustainable development or to enhance the overall efficiency of the UK airspace network, which need to be considered alongside these environmental objectives. The Government looks to the CAA to determine the most appropriate balance between these competing characteristics. Flights over National Parks and AONBs are not prohibited by legislation as a general prohibition against over-flights would be impractical. Government policy focuses on minimising the over-flight of more densely populated areas below 7,000 feet (amsl), but balances this with CO₂ emissions between 4,000 and 7,000 feet (amsl). However, where it is practical to avoid over-flight of National Parks and AONBs below 7,000 feet (amsl), the Guidance asks that the CAA encourages this.</td>
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1. DfT, Guidance to the Civil Aviation Authority on Environmental Objectives Relating to the Exercise of its Air Navigation Functions, January 2014
2. National Parks and Access to the Countryside Act 1949, National Parks (Scotland) Act 2000, and “Duties on relevant authorities to have regard to the purposes of National Parks, Areas of Outstanding Natural Beauty (AONBs) and the Norfolk and Suffolk Broads Guidance Note”, DEFRA 2005.
### 3. Rationale for the Proposed Change

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<th>3.1</th>
<th>Does the rationale for the ACP include environmental reasons?</th>
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<td>No</td>
<td>The rationale for the TMZ does not include environmental reasons. The sponsor's overall aim of the Walney TMZ is “to maintain the effectiveness and efficiency of the airspace surrounding the Morecambe Bay Offshore Wind Farms by mitigating the effects of the WTGs on BAE Warton and Barrow/Walney Island Aerodrome flying operations and BAE Warton PSR-based ATS operations”, thereby the primary reason for the proposal is that safety levels are maintained.</td>
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### 4. Nature of the Proposed Change

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<th>4.1</th>
<th>Is it clear how the proposed change will operate, and therefore what the likely environmental impacts will be?</th>
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<td>Yes</td>
<td>The operation of the Walney Extension Wind Turbine Generators (WTGs) would affect BAE Systems Warton (Warton) Aerodrome flying and Air Traffic Service (ATS) operations and potentially those of BAE Systems at Barrow/Walney Island Aerodrome, with the most significant effect being the detection of the Walney Extension WTGs by the Warton Primary Surveillance Radar (PSR). A BAE report, of the RADAR performance of flights over the Walney wind farm, was submitted in support of the sponsor’s argument that the existing operational WTGs of Walney 1 and 2, WoDS (which are co-located), Barrow and Ormonde do affect the Warton PSR with extensive ‘clutter’ in the area of the Wind Farms. However, Warton have been able to operate without interruption despite the ‘clutter’ in the area. The sponsor has proposed that it is therefore the introduction of Walney Extension Offshore Wind Farm that, on a cumulative basis, will affect the Warton PSR. The sponsor is concerned that turbine proliferation could result in the number of returns that are detected by the radar causing an overload and failure of the Tracker process. As a consequence, the sponsor proposed a TMZ that encompasses both existing areas of the wind farm and the extension. In the interests of reducing the size of the TMZ, Barrow and Ormonde WTGs have been excluded. Likewise, the parts of the proposed 2 NM buffer zone overlapping the D406 danger area have been excluded. After review and examination of the case made by the sponsor, the CAA has concluded that it is unnecessary to extend the TMZ to encompass the existing WTGs, and that there is no need for applying a 2NM buffer to the TMZ. If the Warton radar clutter induced by the Walney Extension WTGs is not addressed, Warton ATC will be required to apply 9.27 km (5 NM) separation between any aircraft in receipt of a Deconfliction Service (DS) and any unknown or false returns from the wind turbines, which could significantly</td>
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restrict Warton’s operations in this portion of airspace. Habitually reduced DS from Warton ATC in the area of the Walney Extension would effectively render a large volume of the Class G airspace above the Irish Sea unusable unless pilots agree to accept a ‘limited service’ or a downgrade in service.

The proposed establishment of the TMZ is one element of a 3-part Mitigation Package aimed at negating the effect of the clutter from the Walney Extension Offshore WTGs upon the Warton PSR. The three parts are:

- Element 1: Establishment of a TMZ;
- Element 2: Authorisation to control Secondary Surveillance Radar (SSR5)-Alone and;
- Element 3: Suppression of PSR returns within the boundary of the Walney 1, 2, Extension and WoDS Offshore Wind Farms.

The sponsor anticipates the proposed solution would provide Warton Air Traffic Control (ATC) with assured positional identification and Commercial Air Traffic (CAT) operators with collision avoidance mitigation through the cooperative use of Airborne Collision Avoidance System (ACAS). It could also maintain current effectiveness and efficiency in the airspace while radar services are provided using SSR data-only in the area of the Morecambe Bay Offshore Wind Farms.

A potential drawback of establishing a TMZ is that non-transponding aircraft may choose to take an alternative route in order to ‘bypass’ the TMZ, resulting in a change in traffic patterns and ATC workload in this area. This would only reasonably occur when aircraft have been unable to establish two-way radio communications with Warton ATC, the TMZ Controlling Authority. Whilst no aircraft operations are excluded from the TMZ airspace, it is possible nonetheless that some General Aviation (GA) operators might elect to route on or closer to shore to avoid the TMZ requirements rather than routing offshore through the TMZ.

Evidence in the surveys conducted of the Liverpool and Morecambe Bays shows more than 80% of the recorded GA traffic (non-BAE, non CAT, non-Military) remains within 3 NM of the Irish Sea north, east & southern rim in the areas of Liverpool & Morecambe Bays. At its closest, the revised dimensions of the TMZ mean that it would be at least 6.5NM from the coast. Furthermore, observed traffic farther offshore is transponder equipped (10% of the remaining GA traffic transiting these areas did not have SSR) and usually in two-way radio contact with BAES Warton or Barrow/Walney Island ATC. Therefore, it is anticipated that there will be little, if any, traffic displacement due to the proposed Walney TMZ inhibiting GA flight operations.

The sponsor acknowledges that it is possible nonetheless that some GA operators might elect to route on or closer to shore to avoid the TMZ requirements rather than routing offshore through the TMZ. If this were the case, then it could result in a change in the noise impact on the ground and/or an increase in CO₂ emissions if an aircraft were to take a longer route than it would have otherwise taken.
Accepting that, the sponsor anticipates that the environmental impact of the Walney TMZ will be neutral within the three main categories of noise, CO₂ emissions and local air quality. Further consideration of each category will be outlined later in this report.

4.2 Have alternative options been considered, and have the environmental impact of each alternative been assessed?  Partially

Yes a number of alternative options have been considered, which are as follows;
- Do nothing,
- Implement a PSR solution,
- Implement a Radio Mandatory Zone (RMZ),
- Conduct SSR only operations,
- Implement PSR blanking or a Non-Automatic Initiation Zone (NAIZ) only,
- Implement a TMZ with associated SSR-only operations and PSR suppression of returns.

There was no specific assessment of the environmental impact of each option. However, in light of the likely minimal environmental impact, and the fact that the proposal is not driven by environmental factors, this apparent omission is not unreasonable.

5. Noise

5.1 Has the noise impact been adequately assessed?  Yes

It is expected that the noise impact, if any, after TMZ implementation will be minimal due to the offshore location of the proposed TMZ and the little, if any, change in traffic pattern or routing over the ground from the pre-implementation situation.

It is not possible to assess quantitatively the potential impact as any assumptions about GA traffic patterns and the occurrence of any re-routing would be too theoretical to support any findings. Additionally, based on the likely occurrence of any such noise impact (which the traffic surveys undertaken by the sponsor suggest will be minimal), the use of a qualitative assessment by the sponsor is reasonable for this proposal.

5.2 Has the noise impact been adequately presented in the consultation and the submitted proposal?  Yes

Yes – the potential for an insignificant noise impact is explained in both documents.
6. Emissions

6.1 Has the impact on CO₂ emissions been adequately assessed?

The sponsor recognises in both the consultation and proposal documents that aircraft contribute to carbon dioxide (CO₂) emissions and this has an impact on climate change. Whilst it is acknowledged that it is possible that some GA operators might elect to route on or closer to shore to avoid the TMZ requirements rather than routing offshore through the TMZ, this is anticipated to be an insignificant proportion. Access to the activated TMZ airspace, which coincides with the Warton ATC Lower Airspace RADAR Service (LARS) hours (Mon-Thu 0730-1900 Local; Fri 0730-1700 Local Time) will be available wherever practicably possible, such that little, if any, traffic displacement or re-routing is anticipated and any re-route taken is likely to be insignificant. No re-routing will be required outside the TMZ activation times. This airspace proposal ensures sustainability of the efficient routing of aircraft.

Based on the scale of any likely impact in terms of longer routes (minimal, if at all), the consideration of the impact on CO₂ emissions for this proposal is reasonable.

6.2 Has the impact on CO₂ emissions impact been adequately presented in the consultation and the submitted proposal?

Yes – the potential for a small increase in CO₂ emissions is explained.

7. Local Air Quality

7.1 Has the impact on Local Air Quality been adequately assessed?

The sponsor recognises that CAP 725, Appendix B, Annex 8 identifies that local air quality at ground level remains largely unaffected by aircraft emissions that take place above 3,000 ft above ground level (agl) because dispersion reduces concentration levels for these emissions. In the context of local air quality, the overall objective under CAP 725 is to determine whether the proposed airspace changes will exceed any statutory air quality standards, and if so, what contribution the proposed change would make towards such an exceedence.

For a number of reasons, this proposal is very unlikely to have any impact on local air quality:
- The proposed TMZ lies offshore;
• The anticipated impact upon traffic patterns is minimal (if any):
• Any traffic affected will be light aircraft (that have relatively low emissions);
• There is no Air Quality Management Areas in the vicinity.

7.2 Has the impact on Local Air Quality been adequately presented in the consultation and the submitted proposal? Yes

Yes - the expectation of no impact on LAQ is explained in both documents.

8. Tranquillity

8.1 Has the impact on tranquillity been adequately considered? Yes

It should be noted that the Lake District National Park is in close proximity to the proposed TMZ, which was not raised directly in the proposal or consultation document. However with the Lake District National Park in mind, it is are unlikely that both tranquility and visual intrusion will be impacted by any GA displacement and, in the worst case, the numbers of those negatively affected are not likely to increase significantly upon implementation. Based upon the expectation that this change will have minimal (if any) changes on traffic patterns, the potential impact on tranquility has been adequately considered by the sponsor.

8.2 Has the impact on tranquillity been adequately presented in the consultation and the submitted proposal? Yes

Yes – tranquillity has been briefly considered in both documents, the sponsor anticipates that it is are unlikely that both tranquility and visual intrusion will be impacted by any GA displacement and, in the worst case, the numbers of those negatively affected are not likely to increase significantly upon implementation.

9. Visual Intrusion

9.1 Has the impact of visual intrusion been adequately considered? Yes

It should be noted that the Lake District National Park is in close proximity to the proposed TMZ, which was not raised directly in the proposal or consultation document. However with the Lake District National Park in mind, it is are unlikely that both tranquility and visual intrusion will be impacted by any GA displacement and, in the worst case, the numbers of those negatively affected are not likely to increase significantly upon implementation.
implementation. Based upon the expectation that this change will have minimal (if any) changes on traffic patterns, the potential impact on visual intrusion has been adequately considered by the sponsor.

9.2 Has the impact of visual intrusion been adequately presented in the consultation and the submitted proposal?

Yes – visual intrusion has been adequately considered in both documents.

10. Biodiversity

10.1 Has the impact upon biodiversity been adequately considered?

Yes – based on the anticipated impacts of this proposal, there is unlikely to be any impact specifically upon biodiversity.

10.2 Has the impact upon biodiversity been adequately presented in the consultation and the submitted proposal?

Yes – whilst there is no specific mention of biodiversity in the documents, this is not unreasonable considering that any environmental impacts are likely to be minimal (if any).

11. Continuous Descent Approaches

11.1 Has the implementation of, or greater use of, CDAs been considered?

Consideration of CDAs is not relevant for this proposal.

12. Impacts Upon National Parks and/or AONBs

12.1 Does the proposed change have an impact upon any National Parks or Areas of Outstanding Natural Beauty (AONBs)?

The statutory purposes of National Parks are to conserve and enhance their natural beauty, wildlife, and cultural heritage and to promote opportunities for the understanding and enjoyment of their special qualities by the public. The statutory purpose of AONBs is to conserve and
enhance the natural beauty of their area. In exercising or performing any functions in relation to, or so as to affect, land in National Parks and AONBs, the CAA is required to have regard to these statutory purposes under s.19 and Schedule 2 of the Civil Aviation Act 1982. This duty was re-stated in the revised Air Navigation Guidance issued in 2014.

This duty was also reiterated in the Aviation Policy Framework (March 2013) which stated “the CAA has legal duties to have regard to the purposes of National Parks and Areas of Outstanding Natural Beauty and must therefore take these into account when assessing airspace changes.”

Whilst recognising this duty it is also true that flights over National Parks and AONBs are not prohibited by this legislation as a general prohibition against over-flights would be impractical.

In the case of this proposal, whilst the Lake District National Park is close to the proposed TMZ, it is also far enough offshore such that there is anticipated to be no effect upon it or any other National parks or AONBs.

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<th>13.</th>
<th>Traffic Forecasts</th>
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<td>13.1</td>
<td>Have traffic forecasts been provided, are they reasonable, and have these been used to reflect the future impact of the proposal?</td>
<td>No</td>
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The proposal is not expected to have any impact on traffic numbers and for that reason it is unnecessary to present traffic forecasts in this instance. This omission is reasonable based upon the nature of this proposal.

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<td>14.1</td>
<td>If undertaken, has evidence of non-aviation stakeholder consultation been provided?</td>
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The consultation was available on the sponsor’s website and was accessible by any interested parties. The sponsor’s aim for the consultation was primarily to seek industry comment on the proposal and to refine this accordingly prior to submission to the CAA.

Non-aviation stakeholders for consultation included environmental and heritage organisations and local authorities. Although the proposed change to the airspace lies offshore, and there are no anticipated changes to the way aircraft operate over land, the neighbouring coastal districts and parish councils were also consulted. Although it should be noted that none of the non-aviation consultees responded to the consultation.
| 14.2 | Has account been taken of the results of the environmental factors raised by consultees or has evidence been provided to indicate why this has not been possible? | Yes |

No environmental factors were raised by consultees.

The British Hang Gliding and Paragliding Association (BHPA) responded with the sole objection to the proposal, though BHPA acknowledged that there is no great volume of hang gliding and paragliding traffic through the area. BHPA objected to the proposal because it believed that it failed to follow best practice. It stated that “the proposed TMZ is considerably larger than it needs to be and should only cover the turbines that cause an issue. BHPA further cast doubt on whether there is sufficient information within the proposal for consultees to be able to reach a meaningful decision with respect to whether the possible radar solutions have been appropriately assessed.”

| 15. | Compliance with CAP 725 | Status |
| 15.1 | Have all environmental assessment requirements specified in CAP 725 been met, where applicable? | Yes |

Yes – all requirements have been met where applicable and where relevant.

| 16. | Other Aspects | Status |
| 16.1 | Are there any other aspects of the ACP, that have not already been addressed in this report, that may have a bearing on the environmental impact? | No |

There are no other aspects to note.

| 17. | Recommendations | Status |
| 17.1 | Are there any recommendations for the Post-Implementation Review? | Yes |

It would be useful for Warton to monitor and record instances on non-transponder traffic being denied access to cross the TMZ, and to record the reason for any such refusals.
18. **Government Approval**

18.1 Is the approval of the Secretary of State for Transport required in respect of the environmental impact of the airspace change proposal?

No – As it is anticipated that the proposal will not result in a significant detrimental environmental impact approval from the Secretary of State is not necessary for this proposal.

19. **Conclusions**

19.1 Can an overall environmental benefit be demonstrated (or justified/supported)?

No overall environmental benefit is likely, and the sponsor has not set out to claim any such benefit. The key reasons for proposing this change do not include environmental ones.

Overall, the sponsor anticipates that the environmental impact of a new TMZ will be neutral, or at worst an insignificant negative impact arising from any re-routed GA traffic, within the categories of noise, CO₂ emissions and local air quality. It is not anticipated that the TMZ will reduce the environmental impact of aviation in the relevant airspace; however, the sponsor feels that it is reasonable to expect that the environmental impact of aviation will not worsen because of the change. Both tranquillity and visual intrusion are unlikely to be impacted by any GA.

Acknowledging the scale, characteristics and current activity in the area of the TMZ, the sponsor’s case for a minimal (if any) environmental impact is reasonable and supported to the extent that is possible. If implemented, monitoring the occurrence of any refusals to access the TMZ will provide evidence at the post-implementation review of the scale of any environmental impacts.

### Outstanding Issues

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<th>Issue</th>
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### Additional Compliance Requirements (to be satisfied by Change Sponsor)
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<th>Serial</th>
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### Environmental Assessment Sign-off/Approvals

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<thead>
<tr>
<th>Name</th>
<th>Signature</th>
<th>Date</th>
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<tbody>
<tr>
<td>Environmental Assessment completed by (ERCD representative)</td>
<td></td>
<td>1 May 2015</td>
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<tr>
<td>Environmental Assessment approved by (Head of ERCD)</td>
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