

CAA CAP 1616 Options Appraisal Assessment (Phase III Final)

Title of Airspace Change Proposal:	Moray Offshore Windfarm (West)		
Change Sponsor:	NATS		
ACP Project Ref Number:	ACP-2019-72		
Case study commencement date:	17/05/2021	Case study report as at:	28/07/2021

Account Manager: [Redacted]	[Grey]	Airspace Regulator (Engagement & Consultation): [Redacted]	[Yellow]	IFP: [Redacted]	[Orange]	OGC: [Redacted]	[Dark Blue]
Airspace Regulator (Technical): [Redacted]	[Green]	Airspace Regulator (Environmental): [Redacted]	[Purple]	Airspace Regulator (Economist): [Redacted]	[Light Blue]	ATM (Inspector ATS Ops): [Redacted]	[Red]

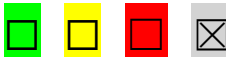
<p>Instructions</p> <p>To aid the SARG project leader's efficient project management, please highlight the "status" cell for each question using one of the four colours to illustrate if it is:</p> <p style="text-align: center;"> Resolved - GREEN Not Resolved – AMBER Not Compliant – RED Not Applicable - GREY </p>
<p>Guidance</p> <p>The broad principle of economic impact analysis is proportionality; is the level of analysis involved proportionate to the likely impact from that ACP? There are three broad levels of economic analysis; qualitative discussion, quantified through metrics, and monetised in £ terms. The more significant the impact, the greater should be the effort by sponsors to quantify and monetise the impact.</p>

1. Background – Identifying the Do Nothing (DN) /Do Minimum (DM) scenarios		Status
1.1	Are the outcomes of DN/DM scenarios clearly outlined in the proposal?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1.1.1	<p>Has the change sponsor produced an Options Appraisal (Phase III - Final) which consists of the Full appraisal with any refinements or changes made as a result of the Stage 3 formal consultation with stakeholders? [E24]</p> <p>Yes, the change sponsor has produced the Final Options Appraisal which summarises the outcome of the consultation feedback received from stakeholders. The sponsor stated there are no changes to the final proposal because of the stakeholder consultation.</p> <p>The sponsor does not provide an environmental impact assessment following WebTAG, nor estimates the CO₂ impacts and fuel burn because it is anticipated that the overall impact of this airspace change is negligible, hence it would be disproportionate to undertake a more detailed impact analysis.</p>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

2. Direct impact on air traffic control		Status
2.1	Are there direct cost impacts on air traffic control / management systems? If so, please provide below details of the factors considered and the level in which this has been analysed.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
2.1.1	<i>Examples of costs considered (please add costs that have been discussed, and any reasonable costs that the Airspace Regulator (Technical) feels have NOT been addressed)</i>	
		Not applicable Qualitative Quantified Monetised
2.1.2	Infrastructure changes	x
2.1.3	Deployment	x
2.1.4	Training	x
2.1.5	Day-to-day operational costs / workload / risks	x
2.1.6	Other (provide details)	x

2.1.7	Comments: The sponsor states that there are no known costs which would be imposed on commercial aviation except routine AIRAC updates to FMS and flight planning systems. The sponsor anticipates that the developer has agreed to cover all the engineering costs for the Radar RAG Blanking implementation and there would not be any other infrastructure costs.				
2.2	Are there direct beneficial impacts on air traffic control / management systems?				<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	If so, please provide details and how they have been addressed:				
2.2.1	<i>Examples of benefits considered</i>	Not applicable	Qualitative	Quantified	Monetised
2.2.2	Reduced work-load	x			
2.2.3	Reduced complexity / risk	x			
2.2.4	Other (provide details)	x			
2.2.5	Comments:				
2.3	Where monetised, what is the net monetised impact on air traffic control (in net present value) over the project period? N/A				
2.4	Are the direct impacts on air traffic management analysed accurately and proportionately? Yes, the sponsor assesses all the criteria as listed in Tab E2 – CAP1616. The impacts are only qualitatively analysed because they are negligible, and it is not proportionate for the sponsor to quantify and monetise them.				<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

3. Changes in air traffic movements / projections					Status
3.1	What is the impact of the ACP on the following and has it been addressed in the ACP proposal?				<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		Not applicable	Qualitative	Quantified	Monetised
3.1.1	Number of aircraft movements		x	N/A	N/A
3.1.2	Type of aircraft movement		x	N/A	N/A

3.1.3	Distance travelled		x	N/A	N/A
3.1.4	Area flown over / affected		x	N/A	N/A
3.1.5	Other impacts	x			
3.1.6	<p>Comments: The sponsor states that the proposed airspace change does not aim to change air traffic patterns. For GA users equipped with an operating transponder there would be no change in access because of the proposed TM, however aircraft without an operation transponder will have a one-off cost to access the TMZ, i.e. circa £2,000 to purchase a transponder. Most GA aircraft (>99%) are transponder equipped and they will not be impacted by the proposed airspace change.</p>				
3.2	<p>Has the forecasting of traffic done reasonably using best available guidance (e.g. DfT WebTAG, the Green Book, Academic sources...etc?) The sponsor does not provide a traffic forecast because this ACP aims to implement a transponder mandatory zone (TMZ) which guarantees a safe and effective mitigation against radar issues associated with WTGs.</p> <p>■ The sponsor does not provide a traffic forecast as the aim of the ACP is to mitigate against potential radar issues as a result of an offshore wind farm development. This ACP is not about stimulating traffic growth.</p>				
3.3	<p>What is the impact of the above changes (3.1) on the following factors? The sponsor states that there will be no change in air traffic patterns and consequently no impact noise because the area under consideration is 22.5 km from the Caithness coast and 24 km from the Aberdeenshire coast. This ACP will not affect the change in fuel burn for commercial airline, because flight plannable routes will remain unchanged and they will be able to re-route using the TMZ as they currently do, and the impact on non-transponder equipped aircraft could have an increase in fuel burn but is negligible (<2 per week). The sponsor also clarifies that these conclusions are based on the analysis conducted in the August 2019, which showed that for a total of 962 tracks, 955 were SSR tracks (99.3% per week) and only 7 PSR tracks (0.7% per week) passed through the region, hence given that there is no aircraft ID available from PSR-only information it is not straightforward to quantify the number of aircrafts affected.</p> <p>■ It is understood from the submission that the majority of aircraft operating within the area will not be impacted by this change as they are equipped with a transponder. However, this ACP would impact non-transponder equipped aircraft which would be required to route around the TMZ. The sponsor analysed the region's PSR and SSR track returns for August 2019, which indicated that 7 PSR-only tracks passed through the region, equating to 0.7% or <2 PSR-only tracks per week. As a result of the percentage of traffic the sponsor anticipates being impacted by this change, the impact to CO₂ emissions can be considered negligible. The impact on non-transponder equipped aircraft has potential to be further mitigated if prior approval is granted to access the TMZ by the TMZ Controlling Authority.</p> <p>Given that the TMZ is entirely over the sea it is not likely that there will be any impact to noise, local air quality, biodiversity or tranquillity as a result of this ACP. Furthermore, as this ACP has been designated as a Level 2B change, there is no requirement to carry out an assessment of these environmental impacts.</p>				

		Not applicable	Qualitative	Quantified	Monetised
3.3.1	Noise	x			
3.3.2	Fuel Burn		x	N/A	N/A
3.3.3	CO2 Emissions		x	N/A	N/A
3.3.4	Operational complexities for users of airspace		x	N/A	N/A
3.3.5	Number of air passengers / cargo	x			
3.3.6	Flight time savings / Delays	x			
3.3.7	Air Quality	x			
3.3.8	Tranquillity	x			
3.4	<p>Are the traffic forecast and the associate impact analysed proportionately and accurately according to available guidelines (e.g. WebTAG or the Green Book?)</p> <p>The Sponsor does not provide any traffic forecast because the proposed airspace change will not affect traffic capacity.</p> <p><input checked="" type="checkbox"/> The sponsor does not provide a traffic forecast as the aim of the ACP is to mitigate against potential radar issues as a result of an offshore wind farm development. This ACP is not about stimulating traffic growth.</p>				<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3.5	<p>What is the total monetised impact of 3.3? (Provide comments)</p> <p>N/A</p>				

4. Benefits of ACP					Status
4.1	Does the ACP impact refer to the following groups and how they are impacted by the ACP?				
		Not applicable	Qualitative	Quantified	Monetised
4.1.1	Air Passengers	x			
4.1.2	Air Cargo Users	x			
4.1.3	General aviation users		x	x	x

4.1.4	Airlines		x	N/A	N/A
4.1.5	Airports	x			
4.1.6	Local communities	x			
4.1.7	Wider Public / Economy		x	N/A	N/A
4.1.8	<p>Comments: GA users, that are not transponder equipped, may incur increased fuel burn if they are forced to reroute around the TMZ. However, the fuel burn impact would be negligible because less than 2 aircraft per week are expected to pass through this area.</p> <p>█ The sponsor states that there will be “no local environmental impacts such as noise, visual intrusion, tranquillity or local air quality” as the proposal is offshore. As this ACP has been designated as a Level 2B, there is no requirement for the sponsor to carry out an assessment of these environmental impacts.</p>				
4.2	How are the above groups impacted by the ACP, especially (but not exclusively) looking at the following factors: below:				
4.2.1	Improved journey time for customers of air travel	N/A			
4.2.2	Increase choice of frequency and destinations from airport	N/A			
4.2.3	Reduced price due to additional competition because of new capacity	N/A			
4.2.4	Wider economic benefits	The introduction of the wind farm is anticipated to provide CO ₂ e benefits of c. 1 million tonnes per annum, but this benefit is not an airspace change related benefit and it will only be realised if the airspace change is implemented.			
4.2.5	Other impacts	Safety benefits as the change will mitigate the risk of failing to detect a potential conflict between aircraft.			
4.2.6	Comments:				
4.3	What is the overall monetised impacts associated with 4.1 and 4.2 the above? N/A				
4.4	What are the non-monetised but quantified impacts of the above? (Insert details of description) The percentage of non-transponder equipped GA aircraft that may incur in an increase in fuel burn is <%1.				
4.5	What are the qualitative / strategic impacts described above? The design proposal is for the implementation of radar blanking alongside a TMZ to provide mitigation solution for significant radar clutter on				

	radar displays.	
4.6	What is the overall monetised benefits-costs ratio (BCR) of the policy? Is it more than 1? N/A	
4.7	Have the sponsors provided reasonable justification for the proportionality of analysis above? Yes, in line with a Level 2B ACP, the sponsor provides the environmental assessment which includes the CO ₂ emissions assessment but since the proposed airspace change does not anticipate to changes the air traffic patterns, and due to the location of the airspace change, no noise impact assessment has been undertaken.	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4.8	If the BCR is less than 1, are the quantitative and qualitative strategic impacts proportional to the costs of the ACP? N/A	

5. Other aspects	
5.1	Nil

6. Summary of Assessment of Economic Impacts & Conclusions	
6.1	<p>The sponsor's Final Options Appraisal fulfils the minimum requirement for a Level 2B airspace change by providing the qualitative analysis for all relevant criteria. The proposed final option (Option C) would have no significant environmental impacts and the overall CO₂ benefits arising from the windfarm project will outweigh the negligible fuel burn costs that GA users will incur.</p> <p>The sponsor states that Option C -WTG locations RAG blanked, with a TMZ plus a minimum 2NM buffer to align with existing and planned TMZ – guarantees the optimum solution to mitigate the impact of the MOWWL WTGs on the Allanshill PSR system.</p>

Outstanding issues?		
Serial	Issue	Action required
1		
2		

CAA Initial Options Appraisal Completed by	Name	Signature	Date
Airspace Regulator (Economist)	[REDACTED]	[REDACTED]	05/05/2021
Airspace Regulator (Environmental)	[REDACTED]	[REDACTED]	02/07/2021