ACP-2023-008
Minutes of ScottishPower Renewables CAA Assessment Meeting
For ADLS Trial TMZ at Mark Hill Windfarm
Held on 29th March 2023 via MICROSOFT TEAMS

29th March 2023

Present	Appointment	Representing
	Technical Regulator (Case Officer)	CAA
	Principal Airspace Regulator	CAA
	Principal Airspace Regulator	CAA
	Airspace Regulator Engagement	CAA
	Aviation Analyst	SPR
	Associate	Cyrrus
	Project Coordinator	Cyrrus

CAA Assessment Meeting (Airspace Trial) Opening Statement

CAA noted that the Statement of Need and PowerPoint presentation were received in advance of the Assessment Meeting and confirmed that the documents must be published by the sponsor, together with minutes of the meeting, on the Airspace Change Portal. CAA explained the purpose of the meeting and confirmed that the meeting was an Assessment Meeting. The CAA reinforced that the sponsor was required to provide a broad description of their proposed approach to meeting the CAA's CAP 1616 Airspace Trial requirements, but the CAA was not deciding whether the proposed approach met the detailed requirements of the CAA's process at this stage. The purpose of the Assessment Meeting (set out in detail in CAP 1616) was broadly:

- for the Sponsor to present and discuss their Statement of Need,
- to enable the CAA to consider whether the proposal concerned falls within the scope of the formal airspace change process.

Additionally, the sponsor was required to provide information on how it intended to proceed to fulfil the requirements of the airspace change process and to provide information on timescales. Lastly, the sponsor was required to provide information on how it intended to meet the engagement requirements of the airspace change process.

	ACTION
Item 1 – Introduction The sponsor opened the meeting by welcoming all attendees and led the introductions. The CAA read the opening statement above and presented the background slides in support of the Aviation Detection Lighting System (ADLS) Trial TMZ at Mark Hill Windfarm Statement of Need, which was previously submitted to the CAA and uploaded to the Airspace Change Portal. The CAA gave apologies for the Environmental Regulator not being present, however, the CAA would provide the sponsor with environmental guidance.	
Item 2 – Statement of Need (discussion and review) The sponsor presented the slides to show the broad content of the Statement of Need, and to help guide the discussion. The purpose of the presentation was to support the Airspace Change Stage 1 'Define' Assessment Meeting, and to outline the benefits a technology trial associated with windfarm lighting installations can bring. All parties had access to the Statement of need.	

The sponsor explained the background for Clauchrie Windfarm, which is located on the edge of the Dark Skies Park in Southwest Scotland and advised that Nature Scot have raised concerns about the visual impact of aviation lighting in such a sensitive area. He advised that, as part of the analysis work we have done for the Clauchrie site, we have had a look at the ADLS installations that have been deployed across Europe. There are two types: 1. The primary radar base system 2. The Electronic Conspicuity (EC). Given the constraints on the spectrum and the number of radars in Scotland we opted to look at the EC based system which would have the least impact on the existing aviation environment. ADLS has never been deployed in the UK and we hope this trial will provide evidence to other windfarm developers, airspace users and Government Environmental departments that technology can support environmental issues relating to light sensitivity. The existing windfarm site chosen for the trial is Mark Hill Windfarm which is adjacent to Clauchrie. This will be the base for the trial of the ADLS system and the position for the temporary TMZ.	
Item 3 – Issues or opportunities arising from proposed change. The slide deck included opportunities and issues identified by the sponsor and a discussion around those took place. The sponsor explained how it was our belief that the trial would demonstrate how an Aviation Detection Lighting System (ADLS) could be implemented in an environmentally sensitive area and still ensure aviation safety and allow us to work with the CAA to assist with the validation of their draft guidance material on aviation lighting. As mentioned previously it gives an opportunity to expose potential technology to other windfarm developers whilst also proving the concept of minimising the visual impact of aviation lighting in sensitive areas such as the dark skies park in Southwest Scotland. We believe it will also inform future planning development requirements and allow the aviation community to familiarise themselves with potential new lighting technology. The sponsor did not identify any issues arising from the change.	
Item 4 – Process requirements The sponsor explained the plan for the trial including the proposed dates, location and duration. CAA asked for clarification around current lighting at Mark Hill windfarm and the sponsor explained that there was currently no lighting as the turbines are very small and that the trial would not activate any lighting, any aircraft in the proximity would trigger a sensor which would represent a light being switched on. Traffic will be monitored in that area, all data as to when that system would have turned the lights on will be collated. The team are also talking with NATS to get their data as additional validation; access to this data will be used to back up data obtained from the trial system. Sponsor advised that we are looking to establish the TMZ with dimensions of 3nm radius up to 1500ft vertically. Whilst these dimensions are slightly different to those employed in Europe (4km radius and 1000ft vertical), the rationale behind these dimensions is around the air traffic in the vicinity of Mark Hill. It is smaller GA and, potentially, flying at a lower speed than those aircraft flying in the vicinity of the windfarms in Europe that has already deployed ADSL. As part of the trial, we will check that the dimensions are suitable for a potential permanent deployment at Clauchrie windfarm and we could either increase or reduce the dimensions, as necessary,	**SPR**

Further discussions took place around the technology for the trial, data required for proof of concept, utilisation of previous traffic studies along with learning from previous equipage studies undertaken by Cyrrus & SPR which will inform the trial. The meeting was advised that the trial will run 24/7 so the data will need to be separated into 'daylight & 'night-time' hours. Stakeholder Engagement – The sponsor explained that our initial thoughts were to undertake early, informal, engagement with some aviation stakeholders in the first instance and are looking to engage with them late April. SPR is still in the process of completing a tender process with the equipment supplier. Following on from the initial engagement, we are going to undertake formal engagement, which is a much longer list of stakeholders, whilst also re-engaging with the initial core group as well. Engagement will be undertaken frequently as we go through the project. We are also going to share the CONOPS with the Aviation stakeholders. The CAA advised that this would not be the required level and that formal stakeholder engagement is required before the trial can be approved. Targeted engagement with aviation stakeholders would need to include NATMAC members. These members need to be targeted in the engagement activity that includes the core stakeholders. If the sponsor chooses not to engage with any member, the CAA expects to see rationale in support. CAA will be looking for evidence that the change sponsor has engaged for a certain number of weeks/months with the core stakeholder group. The informal engagement mentioned is actually the formal engagement that is required for this trial, and it needs to be summarised in a report which includes: • Stakeholder list, • Explanation of identification of stakeholders, • Explanation of timeline, • Rationale for timeline chosen for targeted engagement, • An explanation of the feedback received from the stakeholders and how it has influenced, or not, the proposal in terms of design and operational aspects. • Evidence of minutes, emails, presentations etc will be required to support the submission. Noise Impact Assessment – The sponsor advised that there is a belief that there will not be a major noise impact as it is in a very rural area with limited population. Safety Assessment – the sponsor advised the meeting that the Concept of Operations would capture this and would include a HAZID workshop with relevant stakeholders. There will be additional safety assessments taking place, before, during and after the trial. advised that SPR are going to do some dedicated flight trials to collect data as we know its not a very traffic heavy area. There have been flights developed into the trial plan to capture as much data as possible. shared a map of where the trial was taking place and advised that Europe deploy a 4km buffer zone around the area, SPR will only deploy a 3nm buffer; part of the trial will be to validate that assumption and adjust as necessary. Noise Impact Assessment - It is a very sparsely populated area and, as such, we do not expect heavier traffic levels during the trial, with the exception of the dedicated flight trials planned. Safety Assessment - We will hold a HAZID session with some of the key Aviation Stakeholders and will identify a date once we start the engagement process. There is a safety plan being developed and the CONOPS captures a lot of the safety aspects. These will be analysed and fed into the Safety case as we go through the project. Safety work will go on before, during and after the trial itself.	

Item 5 – Provisional timescales* The sponsor indicated that there was a belief that timescales were quite tight as there is a desire to get the trial results ahead of Clauchrie windfarm being built; the target date of which is late 2025/2026. Target date for fulfilment of the trial would ideally be late Q3/early Q4 2023, subject to any contractual issues with the supplier. It is hoped that the trial will run for around six months. There is also a Phase 1 trial taking place which is purely data collection and will take place at Whitely Windfarm as it is slightly busier airspace, and we are looking to deploy this ASAP. *** *The timeline agreed may become subject to change by the CAA. This is because the Secretary of State for Transport has directed the CAA to prioritise RNP Instrument Approach Procedures (IAPs) without an Approach Control proposal; this may impact Airspace Regulation resource and consequently timelines.***	.	
Item 6 – Next steps Sponsor to write up minutes, send to CAA, redact final version and upload to the CAA Airspace portal along with the redacted presentation.		
Item 7 – Any other business and questions CAA asked if there were any plans in place for non-EC equipped aircraft? SPR replied that for the trial purposes an unlit windfarm will be used, which is already on the charts so anything that is unequipped should already be aware of that and plan accordingly. Analysis of NATS data will assist in identifying which ac are operating in the area and allow the team to examine the traffic and the equipage data. There could be non-EC equipped aircraft flying in the day which will need to be considered and this will be factored into the trial plan. We believe that he other main users will be the emergency services, Police and Ambulance, who are always in contact with someone. CAA asked if the team had engaged with anyone else in the CAA regarding lighting and if there had been consideration on other ways of trying to mitigate what you are trying to do in terms of lighting also was it just a TMZ that is going to solve this, given lighting has moved on since 2017. Sponsor replied – Yes, we have spoken with (CAA) and are trying to arrange another call to update him. He is well aware of this trial and is looking forward to seeing where it goes. We have looked at what is available on the market and believe that ADLS is a good solution for the problem and has been successfully introduced in Europe. There are going to be challenges with introducing it into the UK with lack of EC mandate in Class G Airspace, but the trial should inform this. There are other technologies out there that are in the early days of development, which also think they can do the same but without a TMZ; we feel they aren't developed enough for deployment.		

CAA – emphasised the importance of articulating that non- airspace change solutions have been considered -if they exist or don't exist -and whether the lighting is still required. CAA also advised that, even with a TMZ, there is still a risk that an aircraft could stray into the area even if equipped with a transporter and asked the team to ensure an explanation of this would be mitigated was included in the trial plan. Is there a backup lighting system? Sponsor informed the CAA that we are working with the technology supplier to see what was deployed in Europe and other sites. The CAA provided the sponsor with the following environmental assessment guidance: *The environmental assessment requirements for trial ACPs are given in CAP1616 Appendix B para B86-89. There is no requirement to assess any other environmental metrics other than noise for trials less than 12 months.* *A qualitative description of traffic patterns pre and post implementation of the airspace change will be required. For this, the traffic study planned by the sponsor will be useful to set the baseline (i.e., current-day scenario), including numbers and types of aircraft (EC and non-EC equipped), typical altitudes, flight patterns, etc. The sponsor may then estimate the impacts of the proposed airspace structure on these airspace users (e.g., non-EC equipped aircraft that may be required to reroute around the proposed TMZ). The sponsor's assessment should estimate their numbers and alternative routings.* *If impacts are negligible (e.g., no changes in traffic patterns below 7,000 ft., minimal number of aircraft rerouting, no new overflight of noise sensitive receptors (NSRs), etc.), then the sponsor may present this as a justification along with supporting evidence (i.e. the traffic study) in accordance with CAP1616 para B26 to scale down the noise assessment. Additionally, as per CAP1616 para B88, a threshold of 65 dB LAmax (day) and 60 dB LAmax (night) is to be used as screening criteria to determine impacts. The sponsor should therefore consider whether there is a potential for these noise levels to be exceeded at newly overflown NSRs. LAmax contours may be scaled to LAmax spot noise levels depending on magnitude of impacts or scoped out altogether if these thresholds are not reached.* *The sponsor may approach the CAA to agree their noise assessment methodology before submitting their ACP*. Postscript: Telephone call between on Friday 24/04/2023- re ACP-2023-013 (SPR Permanent TMZ). The CAA determines that there is a dependency with ACP-2023-008 and further discussion around this ACP & ACP-2023-13 will take place, in order to plan an assessment meeting. CAA shared the following statement: *The requirements for trial ACPs are given in CAP1616 Appendix B para B86-89. A qualitative description of traffic patterns pre and post implementation of the airspace change will be required. For this, a traffic survey to set the baseline description of the current airspace use to identify the types of aircraft, their altitudes and tracks currently flown will be useful. Based on this analysis, the sponsor may estimate the potential impacts of the airspace change which are likely to be on non-transponder equipped aircraft now requiring to reroute around the proposed TMZ. The sponsor's assessment should estimate their numbers and their alternative tracks.* *If no consequential impacts below 7,000 ft. are identified and no noise sensitive receptors are overflown or if the surrounding airspace is Class G and*		

the number of impacted aircraft are minimal, then the sponsor may present this as a justification along with supporting evidence (i.e. the traffic survey) in accordance with CAP1616 para B26 to scale down the noise assessment. *As per CAP1616 para B88, a threshold of 65 dB LAmax (day) and 60 dB LAmax (night) is used as screening criteria to determine impacts. The sponsor should therefore consider whether there is a potential for these noise levels to be exceeded due to consequential rerouting of aircraft. LAmax footprints may be scaled to LAmax spot noise levels depending on magnitude of consequential impacts or scoped out altogether as described previously.* *The sponsor may approach the CAA to agree their noise assessment methodology before submitting their ACP*. CAA –advised the meeting that he would expect you to produce an AIC if the trial is approved so there is a slightly different timeline for that. Q3 this year there is a cut off in September 2023 and referred us to the NATS website which shows when AIC are to be submitted; the CAA would expect a draft or an idea of what you intend to put in. The coordinates for the TMZ would need to be compliant with CAP1054 ADQ. CAA – advised that CAA reviewing the trial plan is normally 28 days but is always subject to CAA resource and other priorities. This timescale was checked by Cyrrus and confirmed by CAA.		

ACTIONS ARISING FROM ACP-2023-008 ASSESSMENT MEETING

Subject	Name	Action	Deadline

Sponsor