

## Information pack for wind turbine applicants



## Frequently Asked Questions

### 1. Who are NATS?

NATS is the company that provides air traffic control (ATC) services in the UK. Our service is provided at 15 of the UK biggest airports and “en-route” i.e. in the airspace above the UK and over the north-eastern part of the Atlantic Ocean.

### 2. What is safeguarding?

In order to provide safe air traffic services, both NATS and aircraft rely on a number of ground based radars, navigation aids and communication stations. Radars are used by NATS and other agencies to monitor aircraft traffic, navigation aids are used by aircraft to navigate along their route and to land at airports. Communication stations are used by both ground based agencies (control towers and ATC centres) and aircraft to communicate with each other.

Safety is NATS' first and foremost priority and in order to provide a safe service and to meet the terms of the licence granted by the Civil Aviation Authority, this equipment needs to be continuously in operation and protected by any form of interference or disturbance.

### 3. What are the problems?

Common examples of interference that affect our infrastructure are:

- effects of wind turbines upon radar (radar shadows, false radar returns)
- degradation of radio and radar signals due to fixed obstructions or turbines

### 4. How is safeguarding done and how are problems prevented?

Safeguarding is ensured by legislation and processes designed to protect NATS's infrastructure. For construction and fixed obstructions, all NATS assets are notified via maps lodged with Planning Authorities. The Planning authorities will consult NATS when a planning application that conflicts with safeguarding is received.

For wind turbines, the process is different because of the major impact a wind turbine can have on the NATS infrastructure. As such consultation with NATS is compulsory and planning authorities will consult NATS for all wind turbine planning applications over the whole of the UK territory.

#### **NATS is a statutory consultee for all wind turbine planning applications in the UK.**

Civil Aviation Publications CAP764 and CAP670 contain relevant information and are available on the Civil Aviation Authority's website ([www.caa.co.uk](http://www.caa.co.uk)).

### 5. How can I find out if a wind turbine application is likely to be granted or objected to?

With respect to wind turbines, the safeguarded area encompasses the whole of the UK and consultation with NATS is mandatory. Planning authorities will consult NATS during the planning process, but applicants for wind turbines may wish to ascertain whether their application is likely to be objected to or not by NATS in advance of submitting for planning

In this case the options are to carry out a self-assessment (free of charge) or undertake a pre-planning assessment (chargeable).

## 6. What are the NATS self-assessment and pre-planning assessment?

The **self-assessment** is a process whereby prospective wind turbine planning applicants can get a preliminary idea of whether their proposed application is likely to be granted or not, or whether it is advisable to request a pre-planning assessment. The service is free and relies on theoretical radar coverage maps for different obstacle heights. These are available on our website.

The **pre-planning assessment** is a chargeable service that NATS offers to prospective wind turbine applicants. This provides an opportunity for developers to gain a further insight into whether a proposed installation is likely to be objected to or not by NATS prior to submitting a planning application. In order to reach a decision, NATS carries out a range of studies and investigations to determine whether a wind turbine is likely to cause an impact on air traffic safety or not.

Where the turbine is anticipated to cause an issue, further work may be possible to determine whether any remedial action can be taken in order to grant permission subject to certain conditions being met.

## 7. Why has my application been turned down when there are other turbines nearby?

In order to consent or object to planned development, NATS has to consider a number of factors, these include but are not limited to:

- geographical position and line of sight shielding between obstruction and NATS equipment (this may vary over a few metres)
- specific equipment at the NATS site
- terrain features
- airspace class and use (distance and density of air traffic)
- signal levels and characteristics
- turbine characteristics

An additional important factor is the cumulative impact, in some cases a number of turbines are deemed to be acceptable but no more. Unfortunately in some cases this will mean that although a number of turbines are located in a specific area, a new application is turned down. This is because the effect is deemed to be tolerable, however an additional turbine would cause further degradation which would not be acceptable.

Another additional factor is the distance between turbines and the way radar processing treats radar returns from turbines that are lined up. In some cases these can be interpreted as a valid aircraft track (i.e. 2 turbines may be tolerable but a third one may cause 3 reflections to appear as an aircraft moving along its route and to bypass radar filtering).

### Safeguarding Dept.

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## Instructions for the use of NATS self assessment maps.

To ascertain whether your development is likely to have an impact or not, you will need to use our self-assessment maps. You will also require a GIS/mapping package to plot your turbines (ARCGIS etc or GOOGLE "Forestry GIS" (fGIS™) which is freeware). All turbine heights are tip heights.

- You should be able to visualise your turbine(s) position(s) on the GIS map. For most packages you can create a text file with the NGR Eastings and Northings, to plot the turbine position.
- Download our [self assessment maps](#) free from our website.
- Add the relevant map for the turbine height to the GIS map, i.e. the height equal to the turbine height, or just below it if the exact height is not listed. e.g. 60m map for a 60m turbine, 40m map for a 50m turbine, 80m map for a 90m turbine etc.
- You should now be able to see both the radar coverage map AND the turbine position.
- You can now determine whether your turbine is visible to radar. Ideally a radar will not cover the turbine's position at all, or coverage will be at heights greater than the turbine height.

*For example, if you have a 60m turbine, ideally the radar will not cover that area at 60m.*

*i.e. although there may be cover over that position at 100m and 80m, when selecting the 60m map, the cover is reduced leaving the turbine outside radar cover. Conversely if you have a 100m turbine, and the radar can see down to 100m over the turbine location, that turbine is visible to radar.*

- By using the different maps, you should then be able to look at radar cover in different areas at different heights. This can be a useful tool for assessing a specific area and in some cases can be used to determine which positions are more likely to be an issue than others. It can also be used to determine a maximum acceptable turbine height.

*e.g. a potential location is visible to radar at 120m and 100m but not 80m hence a 120m and a 100m turbine would be visible to radar (possible objection) whereas an 80m turbine would be acceptable.*

Once you've assessed your turbine location against primary radar cover, the same must be done for secondary radar (SSR), navigation aids and radio stations by downloading and adding the SSR, AGA and NAV maps. These have 15km/15nm circles representing safeguarded areas for these assets. When you have carried out your self-assessment, you will have determined whether your proposed turbine(s) falls in an SSR/NAV/AGA safeguarded or radar cover area:

If the turbine is outside all these areas, it is unlikely that NATS would object as there should be no technical impact.

If your proposed development is within a safeguarded or radar cover area, while this does not automatically mean an objection, it is recommended that you take out our pre-planning assessment whereby NATS undertakes further studies and provides you with a formal statement on the turbine's impact.

More generic information can be found [on our website](#) together with the details of our [pre-planning assessment](#).