Your response

On all 3 questions, I support the RSGB input. In addition, I have the following comments:

Question 1: Please provide feedback on the additions, amendments and clarifications we have made to the wording of the licence condition to implement our decisions on the scope of the licence condition in our October 2020 Statement, giving reasons for your response.

Confidential? – N

1) Ofcom have still not taken on board the point about the 10W EIRP limit. An EIRP, rather than Power, limit is completely inappropriate. For example, a 10mW Tx into a 40dBi antenna (1.2m dish), (100W EIRP) on 10GHz is not a hazard to anyone, whatever the distance. However, a 100W Tx into an omni (100W EIRP) is a very different matter.
It may be administratively convenient to use EIRP, because in many cases you grant licenses on the basis of EIRP, but a threshold in EIRP is completely arbitrary, and is putting the onus on the user to work out whether there is a problem. Surely this threshold should be meaningful in terms of likely risk of harm if it is to be objective and proportionate.

The ICNRP levels are about Dose, which is Power/kg. The legislation already allowed ~7W into handhelds. A threshold at a number of Watts would be far more appropriate.

Why do you insist on using EIRP as a threshold? Is it a case of Politics overriding Science?

2) You seem to have gone to some length to identify special Shared Site conditions. You allow 10W EIRP-100W EIRP, EIRPs <5% of the Relevant Levels, or a fixed beam of >29dBi with any power. This seems to be picking certain disparate combinations of users for a few special cases, for administrative convenience. It does not show the basis of a sound, evidence based, policy.

In any case, it is unclear how this applies.
Para 1 applies to "Sites which are not a shared site".
Para 2 applies to "Sites which are a shared site", but then says the Licensee must comply with para 1 anyway.
The Shared Site Exemption seems to be illusory. Para 1 still seems to apply. This doesn't make sense.

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Question 2: Please provide feedback on the additions and clarifications to our 'Guidance on EMF Compliance and Enforcement', giving reasons for your response.

Confidential? – N

1) By incorporating the ICNIRP Guidelines into the Licence Conditions, you are giving them the force of Law. This is bound to cause enforcement problems, because they were only intended as Guidelines.

2) This legislation is still disproportionate to the level of risk. It should be noted that these are Reference Levels and err on the cautious side. There is not a clear boundary where harm starts. They represent worse-case absorption rates.
This is not about safety, it is about preventing exposure to levels which *may, not will,* affect health. The Reference Levels are set to avoid effects, not harm. Note that there are higher levels for workers and other employees.
It is not the same as a warning sign on a rifle range, where entering the target area WILL IMMEDIATELY be deadly.
The ICNIRP exposure guidelines are about HEALTH not safety. Representing the ICNIRP reference levels as a "safety limit" is wrong because exceeding these levels is generally not "unsafe".
For these reasons, enforcement should be proportional to the actual risk involved.

3) It is good that you "encourage" compliance, but this is meaningless if you still apply the full force of the law. EMF standards were not designed to be a hard limit or to cater for the wide variety of Amateur installations. Any enforcement action should be approached with discretion.

4) It is clear from the amount of discussion in amateur circles that the problem of calculating fields and antennas in domestic premises, particularly at HF, is extremely complicated and customised to individual circumstances. It really isn't reasonable to expect every amateur to perform these calculations, when no evidence of a problem exists.
The paperwork relating to this legislation so far occupies hundreds of pages of text. The Amateur Licence is only occupies 23 pages including Schedules. Please be proportionate in your Legislation/enforcement.

5) I agree with the assertion that if more than one amateur is present, then all should be treated as operators for the purposes of the EMF calculations.

6) In domestic premises, you should consider making the exemption for all people on the premises, not just the amateur. It is surely up to the amateur, not Ofcom, to make decisions about the risks to his family when at home. You are taking a big step in effectively declaring his home to be a "public" place.

7) It should be possible to be compliant by not transmitting when people are within an area. The phrase "in any area that is accessible to the general public" should be replaced by "in any area where a member of the public is present when transmissions are taking place."

8) You are requiring eighty thousand Amateurs to do paperwork in this legislation. Please consider whether it is all necessary.

9) Although the real world is far more complicated that you might like, it is significant that no cases of harmful exposure have been reported. This strongly suggests that this legislation is disproportionate.

10) It does seem that Ofcom has made a decree, and is not concerned as to the detail of how users will achieve compliance. Requiring documentary evidence of compliance before use is particularly unreasonable, and will stifle experimentation.

Question 3: Please provide feedback on the trial version of our EMF calculator, giving reasons for your response.

Confidential? – N

1) The Ofcom calculator is very basic, and needs a number of caveats on it.
It is important that people are able to see on what these calculations are based.
The most important thing is the Table of Reference Levels against frequency, and the concept of time averaging, including beam direction. Those should be stated in plain text up front, and are quite straightforward. The Ofcom calculator does that quite well, but the Averaging factors over 6 minutes and 30 minutes would benefit from more prominence. Not everyone can plough through the ICNIRP document.

2) The Ofcom calculator seems to do only a basic "EIRP into an omni".
It is not suitable for anything other than Omnis, unless the user knows what he is doing. It risks misleading people with its simplicity.
It does not take account the Near/Far field distance in the main beam in calculating the Separation distance.
It does not give sensible figures for the situation in any other direction unless the sidelobe level is known.
Consequently, it does not handle VHF/microwave yagis/dishes of any significant gain properly.
It does not handle the near field situation and, especially, close proximity to HF wire antennas, which are also in common use by amateurs.

3) The RSGB sheet wants to present a simple solution for all, but it suffers from all the above defects of being based on the Ofcom calculator. Thus, for a yagi, it cannot say whether one should stand underneath it without applying detailed knowledge of the pattern. RSGB has some ideas for this, but it will take a lot of time and effort to develop. More thought should be given before this legislation is enacted.

There is a compromise in giving people absolute accuracy, and a practical appreciation of the real world risks. At present, this does neither well. I am working on a simple model which will give an approximate answer, and would at least give an appreciation of the fields around antennas.

This highlights the mistake in using EIRP, rather than Watts, as the threshold.

4) I just hope that Ofcom will use their discretion in applying this legislation, and will only do so if there is a serious problem flagged up.

5) When producing spreadsheets, please remember that few people can measure RF levels to better than 10%, and do not show excessive significant digits in your calculations. You need to set a good example.

Please complete this form in full and return to EMFImplementation@ofcom.org.uk .