

## Invitation to Tender

### The role of radio spectrum policy to help combat climate change

*This is a draft title can be altered by the consultant in consultation with the project group*

#### Rationale:

Radio spectrum has traditionally been the basis for a wide variety of electronic communications including for mobile/fixed broadband but is expected to play a growing role in the future development of many other sectors of industry (so-called verticals). For example, mobile communications technologies provide a clear 'enablement effect' across multiple sectors, globally. By providing alternative and more efficient solutions to delivering and accessing products and services, mobile technologies facilitate a level of avoided carbon emissions multiple times greater than the carbon footprint of mobile networks themselves.

It is likely that spectrum availability and management will also have an impact on important areas such as climate change.

Climate change is one of the high priority topics in national and international policies. In June 2019, parliament passed legislation requiring the Government to reduce the UK's net emissions of greenhouse gases by 100% relative to 1990 levels by 2050. Doing so would make the UK a 'net zero' emitter. By demonstrating a path to net zero, the UK hopes to set an example that others can follow. A strong domestic record is also vital to the UK's credibility when it tries to persuade other countries to commit to their own efforts on climate change. However, it is also widely acknowledged that achieving the specified targets is highly challenging and requires action across several sectors.

To this end, UK SPF is commissioning a study on spectrum policy aspects which are closely related to the efforts of ensuring climate-neutrality.

#### Scope:

In March 2021, the GSMA published their response to the Draft RSPG Opinion on a Radio Spectrum Policy Programme (RSPG). The points that the GSMA came up with have inspired some of the points that UK SPF would like a consultant to look in to and develop analysis or evidence to test and demonstrate some of these ideas and look at how UK spectrum policy could be shaped to support climate goals.

- Availability of sufficient spectrum resources decreases the number of mobile sites needed, leading to smaller energy consumption, network duplication and smaller number of network equipment. Smaller number of network equipment leads to lower emissions caused by manufacturing.
- Availability of < 1GHz spectrum resources decrease the number of macro sites needed, leading to lower energy consumption, and less network equipment.
- Availability of spectrum for 5G enables operators to develop and offer network solutions needed for IoT and big data. These solutions enable new energy efficient and

environmental solutions across several sectors, transport, manufacturing, agriculture, building and energy.

- Large contiguous spectrum blocks, potentially in fewer bands, are more efficient to deploy, leading to lower energy consumption, and less network equipment. This should be taken into account when studying new spectrum bands for IMT and when preparing for awards. Fragmenting spectrum bands e.g. with set-asides may not be climate friendly.
- Allowing operators to switch-off older mobile technologies (2G/3G) leads to less, more efficient, network equipment, enables more efficient spectrum use with newer technology, and thus smaller energy consumption.
- Allowing operators to deploy shared networks, leads to smaller number of network equipment.
- Avoiding unnecessary deployment limitations (e.g. unnecessary restrictions to transmission power, stricter EMF limits than recommended by ICNIRP) leads to smaller number of network equipment, and enables energy savings.
- Avoiding excess coverage and data speed obligations, enables optimising network operations, energy consumption, and number of network equipment based on actual and timely demands.
- Ensuring equipment power consumption limits are made with environmental factors in mind whilst also being realistic regarding available and competitively priced technologies.
- Availability of enough spectrum to avoid densification.

These points are by no means exhaustive, however. For example, the study could look at the relative eco-credentials of serving applications via dedicated networks using otherwise unused spectrum versus expanding/enhancing multi-service mobile networks to serve those applications.

#### Process:

1. Step one: Review existing research in this area to ensure this commissioned study is unique whilst also benefiting from relevant conclusions of past studies.
2. Step two: Review and analyse each of the above points identifying the more critical ones (or additional points missing from the list) and report back to the UK SPF project group.
3. Step three: Report back to the UK SPF project group with analysis and/or evidence (such as case studies) on what actions to would be most fruitful for policy makers to implement. Please consider all encompassing factors – radio spectrum policy does not just affect vendors, MNOs etc, but all those in the supply chain including non-telecoms sector companies, examining any potential conflicts between spectrum policy and eco-efficiency.
4. Step four: Work with the UK SPF project group to create recommendations that could benefit policy makers. If possible, please order the recommendations by their level of impact – X would be most beneficial, Y would be second most beneficial.

**Guidance:**

- We are happy to be guided by the consultant on which of the points (or additional points) they think we should focus on.
- The study should be focused on spectrum policy and climate change.
- The consultant is free to slightly alter the title of this project in consultation with the UK SPF project group.

**Additional sources of information:**

- In December 2020 the Radio Spectrum Group (RSPG) published a questionnaire of the Sub-group on Role of RSP to Help Combat Climate Change. You may find the responses useful.

**Notes for bidders:**

- total budget is £25,000 (+Vat)
- bidders can have a call with members of the UK SPF drafting group to clarify points prior to submitting a tender
- if you want a call with the group who drafted the tender please let Jo O'Riordan know by 15:00 BST on Tuesday 6 July 2021
- individual bidders are not discouraged however given the study's requirements we will prioritise organisations/group submitters
- the scoring system is:

| Criteria                       | Weight |
|--------------------------------|--------|
| Understanding the requirements | 20%    |
| Relevant experiences           | 20%    |
| Methodology and approach       | 20%    |
| Project management             | 10%    |
| Resources allocated (CVs)      | 20%    |
| Price                          | 10%    |

- the deadline to submit your tender is 15:00 BST on Thursday 22 July 2021
- we will endeavour to let bidders know the outcome of their tender by Thursday 29 July 2021
- unsuccessful bidders will receive their scores to help inform future tenders
- the successful contractor will be required to meet (in person or virtually) with the UK SPF drafting group to provide regular updates and feedback. If all goes to plan the kickoff meeting with the project group will take place w/c 12 August.
- the successful contractor has circa three months from the point of being awarded the contract to supplying the final report

- the successful bidder is expected to work with the UK SPF secretariat and techUK's PR team to create a press release and publicise the report and its findings
- the draft report will be presented to the Steering Board scheduled for 7 October 2021
- the successful contractor is required to present the UK SPF Plenary with a summary of the report with slides at the plenary scheduled for 21 October 2021
- the report is to be published on the day of the Plenary
- in proposals contractors are required to state the total amount they require to complete the piece of research
  - o if possible please breakdown these costs into relevant chunks – phone research etc