

Broadcast Networks Europe response to the public consultation on [Draft] RSPG Opinion on the role of radio spectrum policy to help combat the climate change

[Broadcast Networks Europe \(BNE\)](#) welcomes the opportunity to provide its comments on the [Draft] RSPG Opinion on the role of radio spectrum policy to help combat the climate change. BNE is the trade association for terrestrial broadcast network operators, whose main activity is to create and operate the technical infrastructure required to distribute television and radio channels through radio frequency broadcasting.

BNE members have identified the issue of the carbon emissions associated to the distribution of terrestrial broadcasting services, including TV and radio programs, as a strategic issue. Having responded to the RSPG questionnaire in January 2021, BNE therefore welcomes the publication of the RSPG Report on the role of radio spectrum policy to help combat climate change and the opportunity to provide comments on the subsequent Draft Opinion.

Our main comments can be summarized as follow:

- **We are generally supportive of the various recommendations in the RSPG opinion, especially on the usefulness of development of methodologies to assess the impact of ECS wireless services energy efficiency, and this is relevant for terrestrial broadcasting services.** In our sector of TV program distribution, a BBC study¹ has provided first evidence. Since then, BNE members have joined a variety of interested parties including SVOD and technology actors to gather evidence in other country contexts and at European wide scale. The effort is ongoing and preliminary findings confirm that terrestrial broadcasting is a very energy efficient platform, regardless of the EU country in which it is operating. It is likely to remain so at the horizon 2035 at least under a variety of long term evolution scenarios. (please refer to [Part 1](#) for details).
- **Based on that experience we think the Draft Opinion should not limit the scope of the methodologies and assessment only to wireless ECS services**, because there is increased complementarity, intertwining and sometimes substitutability between wireless and fixed ECS. For instance, for television distribution, various wireless and fixed platforms coexist, compete and cooperate (ie DTT, IPTV, OTT through fixed and wireless networks, Cable, satellite). (please refer to [Part 2](#) for details and to Proposal 1 for consideration in the Final Opinion).
- We note that the Draft Opinion recommends taking those assessments into account for funding research and in elaborating MS strategies on which a EU wide strategy could be put forward. **We think it is also warranted to consider those aspects in upcoming EU spectrum policy decisions, such as preparation of the WRC-23 or EU harmonization decisions.** For instance, the allocation in the UHF band is on the agenda of WRC-23, and protection of terrestrial broadcasting spectrum allocation would be a concrete step to combat climate change. (please refer to [Part 3](#) for details and to Proposal 2 for consideration in the Final Opinion).

Proposals for the Final Opinion:

- 1- On recommendation 1) Add at the end: **Those methodologies should incorporate in a consistent manner ECS fixed technologies so as to allow system level comparisons, taking into account the complementarity and intertwining of fixed and radio components in modern ECS networks and service.**
- 2- Add a new recommendation (2 or after): **RSPG invites the European Commission and MS to always take energy efficiency and other climate related aspects into account in preparation of EU spectrum harmonization decisions or positions in international fora.**

¹ BBC Research & Development White Paper WHP 372, September 2020

Part 1- It is useful to develop methodologies and assess rigorously the contribution of the wireless services to the climate impact of the ECS sector and BNE is engaged in that direction.

BNE members operate in the sector of television and radio distribution. This sector is extremely important for society and reaches all citizens: 95% of European households have at least one TV set, 85% watch TV at least once a week, and the average viewing time is 3h32 per day including non-viewers, 90% of it being consumed live. Similarly, radio reaches 84% of European citizens weekly, with an average radio listening of 2h22 per day. By natural adaptation to a one-to-many distribution mode, and because of the very simple and direct link to the user terminal, terrestrial broadcasting is a very energy efficient way to distribute broadcast programs.

One of the first rigorous evidence supporting that insight came from a BBC study (see footnote 1) published in 2020 comparing the energy efficiency of the various television service distribution platforms. The study concluded that TV distribution and viewing accounts for a non-trivial share of national electricity use and that digital terrestrial broadcast is the least electricity-intensive distribution platform, significantly less than cable, satellite and streaming, the latter three being of similar order.

This example shows the value of rigorous methodology and study to assess energy consumption of ECS services. Obviously, the wider the scope of studies and involvement of various stakeholders, the easier it is to draw conclusions that will be valid for European policy. The recommendation 1 by RSPG is very much welcome: it is important to promote the development of methodologies to assess the impact of ECS wireless technologies on climate change with European wide relevance involving ECS stakeholders and all interested parties.

BNE members have voluntarily engaged in such effort for television distribution. In order to gather evidence with European wide relevance under a rigorous methodology, BNE joined a project whose scope was being defined by an independent contractor and in equal association with a variety of sponsors operating in various countries (France, Austria or with European wide interest) and including DTT transmission operators, but also leading TV channels present on all platforms, one SVOD operator and one neutral technology actor. The project has commissioned an independent management consultancy, specialising in corporate responsibility and sustainability, with an ongoing role in energy assessment for the Digital sector, also supported by leading academics in the field. This in-depth project was launched in July 2020. Final results are expected in autumn 2021 and, pending a decision by the sponsors, are likely to be made publicly available. BNE is interested to follow any further work of RSPG on the issue and is keen to contribute to stakeholders discussion on the role of spectrum policy to help combat the climate change.

The study focuses on a comparison of energy efficiency between of Digital Terrestrial Television and the growing TV distribution platform of IPTV and OTT. Intermediate results confirm the findings of the BBC study and suggest that terrestrial broadcasting is a very energy efficient platform at a European scale and also under a variety of country contexts. At European scale, the energy consumption per device viewing hour through the DTT platform, excluding the TV set, is expected to be less than a 6th of what it is through IP TV or OTT platforms. Situation will vary between countries: the gap for France for instance will be even higher, and for Austria where DTT penetration is less, it will be narrowed, but still significant.

Moreover, the project takes account of expected progress in energy efficiency of internet networks in the future and also of evolving usages (ie linear vs nonlinear viewing for TV, growth of SVOD, growth of data traffic). The preliminary result is that the better performance of DTT is confirmed in the longer term (horizon 2035) under a variety of evolution scenarios for platform penetrations.

In the context of European spectrum policy and climate change, it is relevant to note that the most popular television distribution platform, DTT, which is present in 42% of European households, is also the most energy efficient, and is likely to remain so for the long term.

Part 2- the scope of this assessment should not be limited to wireless ECS services, because there is increased complementarity, intertwining and sometimes substitutability between wireless and fixed ECS.

It is relevant for stakeholders and for policy makers to compare not only the RF components but also whole transmission chains used for ECS at system level.

For television distribution, various wireless and fixed platforms coexist, compete and cooperate (ie. DTT, IPTV, OTT through fixed and wireless networks, cable and satellite). Therefore, a meaningful comparison must consider for instance:

- the DTT transmission chain, including the broadcast network component and the receive antenna.
- the OTT chain which will typically include a internet transmission network and the network interface and Wifi router,
- or the IPTV chain which will typically include a specialized multicast network, a network interface part and a service interface (IP TV box).

As we see, we need to compare various ECS chains, which each consist of a series of wireless and non wireless components.

Therefore, we recommend that methodologies should not only address wireless ECS but also incorporate in a consistent manner ECS fixed technologies so as to allow system level comparisons, taking into account the complementarity and intertwining of fixed and radio components in modern ECS networks and services.

Part 3- The results of these assessments are one factor to consider in upcoming EU spectrum policy decisions, such as preparation of the WRC -23 or EU harmonization decisions. For instance, long term protection of the terrestrial broadcasting spectrum allocation is a concrete step to combat climate change.

The fight against climate change involves reconsidering some of the basic hypothesis and reasoning which have prevailed in the past decades. We note that the Draft Opinion rightly recommends taking the energy efficiency assessment into account for funding research and in elaborating MS strategies based on which a EU wide strategy could be put forward.

According to the preliminary results of our study, a scenario of an eventual migration of all the current DTT services (at least more than 3 hours and half of HD content for big screens (4-5Mbps) per citizen and per day) would have a dramatic impact in terms of energy consumption and increase of emissions.

We think it is warranted to consider those aspects in upcoming EU spectrum policy decisions, such as preparation of the WRC -23 or EU harmonization decisions. While energy efficiency may be only one factor among others to consider, it would seem contradictory if it was ignored.

This could form a new recommendation in the Final Opinion.

For instance, in spectrum management, a strong trend until 2017 was that there was a need for more spectrum for wireless broadband services, and less need for terrestrial broadcasting, because of the progress of source and channel coding.

Now the problematic has evolved:

- We can no longer take the assertion of needing more spectrum for IMT as an obvious fact: wireless broadband has already 14 GHz of spectrum identified, and has been allocated the majority of the UHF spectrum between 470 MHz and 1 GHz; moreover in most countries there are coverage obligations associated to existing spectrum assignments, so overcoming the digital divide is possible simply by respecting current commitments and investing more in deploying infrastructures.
- The terrestrial broadcasting sector has made major efforts for spectrum efficiency, performance meaning more service for less spectrum, and has now reached a threshold where the viability of the service would be at stake if further reductions were contemplated.
- The terrestrial broadcasting platform is the most energy efficient one, significantly better than alternatives, therefore the European success of terrestrial broadcasting also plays in favor of environmental goals.

Decisions by administrations or signals such as the identification of IMT as a coprimary service in Region 1 at WRC-23 might create a threat to the long term access of Terrestrial Broadcasting to the 470-694 MHz spectrum, with negative impact on the carbon emissions of the overall sector of television distribution.