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Ericsson response to the RSPG Public Consultation on the

Draft RSPG Opinion on the role of radio spectrum policy to help combat climate change

2021-08-26

Ericsson is grateful for the opportunity to provide comments on the draft RSPG Opinion on the role of radio spectrum policy to help combat climate change.

Ericsson is of the opinion that the Information and Telecommunication's (ICT) industry has a major role to play in combatting climate change. Digitalization is key to achieve the ambitions in the EU Green Deal and to form a low carbon economy. Hence, Ericsson suggests that the opinion should also consider the positive effects of digitalization and the importance of 5G to address climate adaptation and shift to a low carbon economy

Methodologies to assess the impact of ECS wireless technologies on climate change

1) RSPG invites the European Commission with Member States to promote the development of methodologies to assess the impact of ECS wireless technologies on climate change (i.e. Energy Efficiency, Circular Economy, etc.) with the involvement of ECS stakeholders and all interested parties (including citizens) and, where appropriate, with the support of the European Telecommunications standardisation Institute (ETSI) including if needed CEN, CENELEC. Those methodologies should include a focus on ECS radio component (base stations and user terminals) including the impact of frequency bands

Ericsson would like to emphasize that international standardization in the area of ICT and ECS climate impacts has been ongoing in ITU and ETSI since around 2010 and is of the view that such standards should be kept as broad as possible, and different standardization initiatives in different member states would be less relevant and impactful. To ensure broadest possible standards and building on existing standardization, ITU is the key standardization organization in further developing climate related assessment standards, while for standards focused on energy performance ETSI has traditionally had a broader participation of technical expertise. Moreover, any established collaborations between ETSI and ITU-T SG5 Q9 should be leveraged. Ericsson is also of the view that any standard in this area should start from and build on related environmental assessment standards such as ITU-T L.1410/ETSI EE ES 203 199 established by ITU and ETSI and ITU-T L.1450 established by ITU, and energy efficiency assessment standards developed by ETSI. Finally, as standards are developed in designated processes where citizens are not participating citizens could rather be involved in separate consultations.

5G is indeed a pillar for addressing climate change. The following figure represents a case study for Switzerland which demonstrates the expected carbon footprint reduction in Switzerland in 2030 by use case and scenario if served by 5G mobile networks as estimated by a researchers from the University of Zurich, EMPA and Swisscom

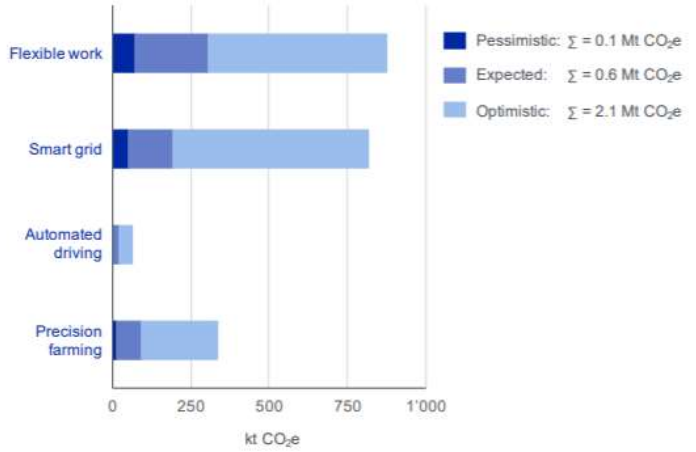

Figure 1: GHG abatement potential in Switzerland 2030 by use case and scenario[1].

Thus, Ericsson suggests to also consider how ICT technologies could be used to address the carbon reduction in other sectors and in that regards, MS should encourage solutions in which the private and public sector cooperate, as much as possible, via e.g. network slicing

2) RSPG invites the European Commission to always take energy efficiency and other climate related aspects into account when funding research within the wireless sector, such as 6G. 3) RSPG invites the MS to initiate national climate and environmental strategies within the ICT sector and urges the European Commission to put forward an EU wide strategy based on the national strategies.

Ericsson suggests that the ambition should be to initiate a joint European strategy for the ICT sector and urge member states to participate in this work, rather than building an EU wide strategy based on the individual member states strategies.

Use of environmentally friendly energy sources and self-regulation

Ericsson would like to suggest the RSPG to use "low carbon and renewable energy sources" instead of "environmentally friendly energy sources".

[1] Next generation mobile networks problem or opportunity for climate protection? Bieser, Jan; Salieri, Beatrice; Hischier, Roland; Hilty, Lorenz (2020).

4) RSPG invites stakeholders which manufacture and operate any equipment, which uses frequencies, to use environmentally friendly energy sources.
5) The RSPG welcomes self-regulation and other voluntary initiatives of the wireless ECS sector to incentivise an increased percentage share of electricity consumed coming from environmentally friendly energy sources including renewable energy sources.
6) The RSPG welcomes wireless ECS sector cooperation and coordination to develop energy efficient standards and to design services and equipment based on such standards.
7) RSPG invites the European Commission to investigate and if necessary propose EU actions to enable MS inter-alia to enhance voluntary initiatives and self-regulatory measures, aiming at combatting climate change within the wireless sector. Such actions should follow the criteria for all regulatory actions such as non-discrimination. They should be based on relevant facts and analysis, so as to use the most efficient measure from an overall societal point of view. The principle of service and technological neutrality should underpin any measure, and any such measure should be general rather than specific.

Ericsson believes that EU should strive for establishing a common European platform for voluntary initiatives and self-regulatory measures.

Harmonised spectrum for purposes related to combatting climate change

8) RSPG points to the fact that
a. At this stage, current harmonised spectrum could respond to various technology needs, stakeholders' strategies and development trends
b. spectrum needs and demands to help combat against climate change can change over time due to a number of factors, in particular the implementation of energy regulations resulting from the Green Deal. It is consequently important to regularly review the forecast long-term spectrum needs and spectrum demands aimed at combating Climate change.

9) RSPG confirms that all the sectors, which can benefit by using wireless technologies in their efforts to reduce emissions, already have a process available (either at international or European or national level) in order to address either future specific spectrum needs or spectrum demands triggered by the evolution of technology.

Ericsson is of the view that RSPG could also play a role in creating a better understanding of the potential merge of wireless networks and the electricity grid related to power supply and storage and identify any policy gaps related to this integration.

10) Any further request for spectrum harmonisation should be addressed via the current mechanisms in place.

11) The common ITU-R process should be used for sectors where the sectoral need for spectrum is mainly worldwide (e.g. Galileo, GMES, scientific services). EU Member States should express these needs in the regular ITU-R study work. This should by actively supported by the European Union in its role as ITU-R Sector Member.

12) In the case that potential modifications to the Radio Regulations are identified, the WRC preparatory process (CEPT) has to be used. This process will be accompanied by a respective RSPG Opinion on WRC to assist the European Commission in developing a proposal for a Council Decision on the EU position for WRC.

13) In all other cases, the common ETSI-CEPT cooperation is recommended. This cooperation in practice also includes the possibility for the European Commission to issue mandates to CEPT and ETSI.

14) Caution shall be applied when trying to address the perceived spectrum needs and requests from the sectors which can benefit from wireless technologies in their efforts at reducing emissions because existing processes may already have been triggered.

Further considerations on ensuring spectrum is made available to support initiatives to combat climate change

Ericsson would like to point that 5G is at the core of reducing greenhouse gas emissions by digitalizing industries. With this purpose, different spectrum ranges are needed depending on the required industry requirements. As example , sensor and low data rate use cases in rural areas can benefit from low bands, while very low latency use cases (such robot communication) require mmWave frequencies and wide area use cases, such transport in the cities need mid-bands. At the same time, mobile broadband connectivity requirements are increasing due the innovative capabilities of 5G. Thus, efficient spectrum management is necessary.

To ensure digitalization in cities to help reducing emissions by for example transport (i.e. smart sustainable cities) is possible at the same time as connectivity needs grow in the city, additional mid-bands spectrum will be needed in the 2025-2030 timeframe, see GSMA | 5G Mid-Band Spectrum Needs - Vision 2030 - Spectrum. Additional nationwide spectrum can meet these needs and help the digitalization of industries. Both 3.8-4.2 GHz and upper 6 GHz (i.e. 6425-7125 MHz) are required.

Additionally, capacity in the low band (i.e. 470-694 MHz) can play a major role on the digitalization of rural use cases and bring connectivity to unserved areas, see The future use of UHF in ITU Region 1 - Plum Consulting

Harmonizing future spectrum for 5G is key for efficient use of digitalization as a decarbonization lever.

Further considerations on ensuring spectrum is made available to support initiatives to combat climate change

15) Member States should ensure the availability of spectrum for public transport purposes, as appropriate.

Ericsson believes that there are other key sectors and industries which are critical to combat climate change (e.g. electricity grids and utilities) and there is a need to ensure their digitalization through access to 5G technologies.

16) The RSPG recommends that Member States better engage in highlighting the potential of current harmonised spectrum to respond to various technology needs in order to support the development of smart meters and smart grids.

17) RSPG notes the development of Wireless Power Transfer, including to evolution of automotive sector, and recommends analysing the coexistence with existing services in the HF band.

Ericsson has no comments in these items

Spectrum used in weather forecasting, monitoring climate change and gathering long-term climate related data

Ericsson has no comments in this issue

Concerns regarding effective functioning of existing 5.6 GHz meteorological climate monitoring systems

Ericsson has no comments in this issue

Wireless ECS: Spectrum management actions and the EECC framework

23) RSPG recalls that the flexibility given by the EECC framework under a general interest objective should be maintained in order to address climate protection.

24) RSPG recognises that the availability of large contiguous frequency blocks per operator could avoid the energy consumption associated with the support of multiple carriers and carrier aggregation. Member States may strive to improve the energy efficiency of networks by making available spectrum in the largest blocks possible where appropriate.

25) The RSPG considers that Member States should award spectrum in a timely manner for the development of innovative services to mitigate climate change.

Ericsson agrees with the RSPG support on the allocation of large and contiguous spectrum blocks as this will allow for a more efficient use of spectrum, including energy consumption. In addition, as stating by the RSPG, releasing the necessary amounts of spectrum for 5G in a timely manner is critical to combat climate change, for example by addressing smart sustainable cities, smart grids or digitalizing industries to reduce their carbon footprint.

26) The RSPG recommends that Member States assess how active or passive infrastructure sharing may help reduce the carbon footprint of wireless ECS while maintaining competition objectives. Based on the results of these assessments, Member States should consider enabling infrastructure sharing among operators.

27) The RSPG recognises that the current EU framework to facilitate the roll-out of indoor small cells may also contribute to combat climate change.

28) The RSPG recommends that the European Commission , and where appropriate the Member States, determine whether ECS Network operators should be required to report on their emissions and the actions they are taking to achieve the Union's environmental targets. The RSPG will contribute to any such determinations within its field of knowledge and expertise. If legal measures are put in place in respect of such reporting, the RPSG recommends that a harmonised approach to the reporting is adopted across the European Union. Any necessary assessments (in line with recommendation 1) above) should be made as regards the measurement methodologies to obtain reported data.

Ericsson would like to emphasize that while the ICT industry forms just 1.4 % of the global greenhouse emissions (full life cycle) and 3.6% of global electricity consumption (operation), it is also the world's largest purchaser of renewable electricity. Indeed, the mobile industry is committed to reduce further its emissions and members states can help by incentivizing solutions (e.g. reducing the license fees) that can achieve this goal. These can include sharing or deploying greener technologies (i.e. 5G). However, Ericsson is of the view that member states should not define the specific method and in that way leave room for innovation. Ericsson is also of the view that rather than stipulating legal measures to report the ECS network operators' emissions, member states could focus on incentives to be given provided that operators take measures

In addition, Ericsson would like to remind RSPG the potential of 5G to help reducing the emissions from other sectors. In fact, ICT technologies can help lowering the overall global emissions by 15%[2] , noting that this study was done considering previous mobile technologies, 5G can accelerate this even further. Ericsson is of the view that this needs to be carefully considered when referring to achieving the Union's environmental targets.

[2] Exploring the effect of ICT solutions on GHG emissions in 2030 (2015, Malmodin and Bergmark)

If any measurements or assessments are requested, Ericsson is of the opinion that measurement and assessment methodologies should be developed from established standards.