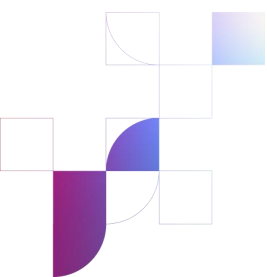# Report on the outcome of the public consultation on the draft Report on Infrastructure Sharing as a lever for ECN/ECS Environmental Sustainability

5 June 2025

Contents

I. INTRODUCTION

During its 61st plenary meeting (5 - 6 December 2024), the BEREC Board of Regulators has approved the Draft Report on Infrastructure Sharing as a lever for ECN/ECS Environmental Sustainability for public consultation (PC).

This report by the Body of European Regulators for Electronic Communications (BEREC), explores infrastructure sharing as a lever for environmental sustainability in electronic communications networks (ECNs) and services (ECSs), aligning with broader EU objectives to reduce the ICT sector's environmental impact.

As a response to the EU Green Deal and the UN Agenda 2030, BEREC examines how regulatory tools might enhance the environmental performance of telecommunications by minimizing the footprint associated with network deployment and operation. This report builds on previous publications of BEREC on infrastructure sharing and bases its analysis on a survey circulated among National Regulatory Authorities (NRAs) within BEREC and on a consultation with stakeholders during a technical workshop.

Main results of this work are presented in the Report[1] which consists of 5 chapters:

- Introduction and context

- Regulatory framework

- Analysis of existing practices from NRAs

- Views of stakeholders (e.g. industry associations)

- Conclusions and future work

Following the approval of the draft Report, a public consultation was launched. In accordance with the BEREC's policy on public consultations, all stakeholders were invited to submit their inputs via EU survey portal by 31st January 2025.

The following PC Report summarises the responses received to the public consultation and presents BEREC's position with regard to suggestions and proposals put forward in those responses, as relevant.

In total 7 responses were received, none of which was marked as confidential.

The contributions were received from the following organisations: AIIP, Connect Europe, ECTA, EWIA, GSMA, MVNO Europe and one private individual.

BEREC welcomes all contributions and thanks all stakeholders for their submissions. Contributions received from stakeholders will be published on the BEREC website, taking into account rules for publication of personal data.

Generally, in their responses, the stakeholders acknowledged the overall significance and timing of the work done by BEREC in order to help identify the current status and future

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[1] BoR (25) 68

initiatives in the field of infrastructure sharing as a lever for ECN/ECS environmental sustainability.

BEREC notes that many stakeholders thanked for the opportunity to submit their views during the public consultation and expressed their willingness to engage further and share their expertise with BEREC in order to build the common industry knowledge.

BEREC appreciates the active feedback received from its stakeholders and is determined to continue working on the subject matter, building further transparency and engagement which will benefit the ICT sector and society as a whole.

II. CHAPTER 1: Introduction and context

The overall feedback from stakeholders who submitted their contributions during the public consultation was positive and welcomed the work of BEREC. Stakeholders welcomed BEREC's interest in the topic of infrastructure sharing as a lever for ECN/ECS environmental sustainability. Respondents also expressed appreciation for the opportunity to submit their views and additional insights through the public consultation.

AIIP expresses their interest to participate to this public consultation as many of its associated operators install and provide VHCNs access networks and acknowledge that infrastructure sharing is an efficient tool to develop VHCNs and has also many advantages among which to ameliorate the conditions to ensure ECN/ECS environmental sustainability.

In particular, AIIP acknowledges that infrastructure sharing would allow the following environmental benefits: reduction in duplicative infrastructure; resource and building materials conservation; energy efficiency improvements and consequently reduction of CO_2 emissions (which would be concentrated and limited to only one infrastructure) and reduction of waste etc. (as per Table 2 on p. 36-37).

Connect Europe welcomes BEREC's acknowledgment that the assessment of the environmental impact of policy decisions should be improved, that key barriers need to be identified, and that enhancing knowledge on this issue is important. However, Connect Europe also points out that data used could be more robust and the report's conclusions are not fully reliable.

ecta welcomes the draft BEREC Report, which: 1) gives a first overview of the state of the art of the EU regulatory framework as regards infrastructure/network sharing as a lever for environmental sustainability of electronic communications networks; 2) analyses the existing practices by NRAs in applying the framework; 3) summarises the view of industry associations (Connect Europe, ecta and EWIA) that have been invited to a dedicated workshop to express their views on the issues.

GSMA believes that BEREC's positive stance on network sharing agreements is key for telecom operators' efforts to reduce carbon emissions. GSMA welcomes BEREC's acknowledgment of the need to improve the assessment of the environmental impact of policy decisions and the way those impacts are weighed against other regulatory objectives. It also suggests that considerations concerning infrastructure sharing must balance sustainability goals with competition aspects and market conditions.

BEREC appreciates the positive feedback from stakeholders and welcomes their engagement with the public consultation. BEREC recognises that infrastructure sharing is widely seen as an important mechanism for promoting the environmental sustainability of ECN/ECS and acknowledges the various benefits highlighted. The focus of this report is to examine how regulatory tools might enhance the environmental performance of telecommunications by minimizing the footprint associated with network deployment and operation. This workstream is part of a broader BEREC work on the environmental footprint of the ICT sector, including the promotion of environmental accountability of companies – which is essential to accelerate the sector's green transition.

BEREC agrees with AIIP that infrastructure sharing is an efficient tool for facilitating VHCN deployment while contributing to environmental sustainability. This aligns with the spirit of the Gigabit Infrastructure Act (GIA), as reflected multiple times at the report.

BEREC also acknowledges Connect Europe's call for more robust data and improved assessment methodologies, recognizing the importance of strengthening the evidence-based approach for policy decisions.

Additionally, BEREC takes note of ecta's support for the report's overview of the EU regulatory framework and its analysis of NRA practices, as well as the contributions made during the dedicated stakeholder workshop. BEREC remains committed to fostering dialogue with industry associations to further refine its approach.

BEREC also acknowledges GSMA's perspective on the importance of balancing environmental sustainability considerations with competition and market conditions, which remain central to BEREC's objectives. BEREC recognises that while network sharing can be a valuable tool for reducing carbon emissions, its implementation must also consider potential impacts on competition and market dynamics. To understand these different mechanisms, BEREC aims to promote a data-driven regulatory approach and welcomes all feedback received to enhance this approach.

Taking these insights into account, BEREC will continue working to improve the understanding of the environmental impact of regulatory frameworks, to address key barriers, and to strengthen the knowledge base on this critical issue. The feedback gathered will further support BEREC's ongoing commitment to promoting environmental sustainability through multiple initiatives. BEREC reiterates its availability to continue engaging with stakeholders, including on their most recent work and knowledge on environmental sustainability.

III.   CHAPTER 2: Regulatory framework

ecta believes that the current legislation already foresees the needed tools for smoothly integrating environmental considerations into decisions on infrastructure and network sharing and does not see any additional policy need. ecta notes that considerations on fixed network sharing agreements are already part of the EECC (namely Article 44, Article 47, Article 61 and Article 73 and the related recitals 105, 106, 124, 156). Moreover, environmental policy objectives have also been one of the driving forces of the recently adopted GIA. Therefore, ecta urges that it is important to effectively implement what is already in the legislation.

In relation to the implementation of the EU Regulatory Framework's provisions regarding network sharing by the NRAs, ecta notes that the use of the environmental sustainability motivations could be already used today in the implementation of the EECC without any legal obstacles, as the Article 44 of the EECC, clearly foresees the environmental sustainability motivation for the provision of co-location and sharing of network elements.

ecta points out that the telecommunications sector in Europe, thanks to the EU Regulatory Framework, has registered good progress in the past twenty plus years in terms of competition. European users of mobile services enjoy a real possibility of choice between different providers' offers. This is a very important asset that Europe has built over time for European consumers and businesses, taking into account the strategic importance of telecommunications in enabling the digitalization of other sectors by creating a spillover effect.

In addition, ecta, Connect Europe and GSMA refer to the European competition regulatory framework.

According to ecta, the 2023 revision of the Horizontal Block Exemption Regulations and Horizontal Guidelines by the European Commission marks a step forward. They appreciate that for the first time, the new guidelines include a dedicate chapter on mobile telecommunications infrastructure sharing agreements. Within these guidelines, the Commission notably acknowledges the potential benefits of network sharing agreements, such as cost reductions, improvements in quality and choice, faster roll out and wider coverage. The guidelines also introduce an assessment framework suggesting certain criteria the fulfilment of which would allow for the conclusion that the network sharing agreement prima facie is unlikely to have restrictive effects on competition.

However, Connect Europe and GSMA both believe that while the guidelines recognise various benefits of network-sharing agreements, they fall short of explicitly acknowledging their environmental advantages and such advantages are not part of the competition assessment of network sharing agreements. Connect Europe thinks that the European Commission should therefore consider sustainability efficiencies in the overall assessment of the procompetitive effects of horizontal cooperation agreements.

Connect Europe and GSMA suggest that the current framework would therefore need to be further improved to also encompass sustainability matters and to take an additional step toward providing a more secure and predictable regulatory environment for mobile network sharing:

- The environmental benefits brought by mobile network sharing agreements, such as energy saving and carbon emission reduction resulting from such sharing, should be one of the factors relevant for the individual assessment of mobile network sharing agreements,

- Geographic scope and coverage of network sharing agreements should be assessed taking into account the pro-competitive environmental benefits resulting from mobile network sharing. If such benefits are more important for nationwide network sharing, then this should be factored into the competition assessment of such sharing agreements.
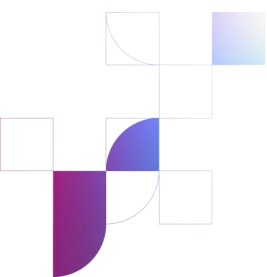
Connect Europe also welcomes introduction of a presumption regarding the compatibility of network sharing agreements with Article 101 TFEU: taken together, all these benefits demonstrate that network sharing agreements are generally pro-competitive.

MVNO Europe suggests that currently applicable horizontal EU legislation affecting all sectors already foresees environmental policy objectives, and the EECC already provides articles (listed and assessed in the draft BEREC Report) empowering NRAs to promote environmental sustainability through infrastructure sharing.

In this chapter, BEREC lists the provisions of the European regulatory framework supporting infrastructure sharing where environmental, public health, or planning objectives are prioritized, specifically Article 44 of the EECC, and other provisions the EECC foresees with respect to infrastructure sharing (Articles 47, 61 and 72) as well as other regulatory provisions which are relevant to cover infrastructure sharing (the BCRD gradually repealed by the GIA).

In addition to these provisions, ecta lists among the provisions of the EECC that considerations on fixed network sharing agreements are already part of the Article 73 of the EECC. BEREC will add a reference to this Article in Chapter 2 of the report.

Connect Europe, ecta and GSMA also mention the horizontal competition regulatory framework which has been highlighted during the workshop with stakeholders. BEREC already notes in the draft report that, infrastructure sharing, especially where active components of the networks are concerned, can raise significant issues in terms of competition, which are already considered by regulators and BEREC coherently with the EU. However, as it has been stated in the conclusions of the report, the report focuses on the links between environmental sustainability and infrastructure sharing and refers to other bodies of works on this subject concerning the additional impacts and issues related to sharing practices.

IV.   CHAPTER 3: Analysis of existing practices from NRAs

Connect Europe argues that NRAs already have access to extensive data (e.g., annual reports, market analysis) and cites Germany's requirement to submit co-use/sharing agreements as an existing administrative burden. They believe mandating NRAs to collect environmental sustainability data contradicts the EU's pledge to reduce red tape by 25% and consider existing EU regulations on sustainability reporting sufficient.

Connect Europe supports a standardised methodology for environmental assessment using existing industry indicators to balance environmental benefits with competition concerns. However, they oppose regulatory intervention, additional bureaucracy, and EU-wide guidelines on sustainable infrastructure and network sharing, arguing that market participants already have sufficient expertise and an existing assessment framework, which could simply incorporate sustainability aspects.

ecta considers that objectives regarding the promotion of infrastructure sharing, the harmonization of regulatory practices and the definition of the standards to assess network sharing's positive effects can be reached without expanding NRAs' mandates or including sustainability as an objective to the EECC. They believe that those objectives could be met

through harmonization of NRA practices. They list several tools of so-called soft regulation that NRAs could use (e.g. industry workshops/consultations on sustainability issues, studies on carbon footprint and environmental impact of ECNs and ECSs, or end-user awareness programs).

Regarding the upcoming revision of the EECC, ecta suggests that focusing on targeted articles aimed at streamlining the application of existing instruments and the standards of proof definitions can allow NRAs to deal with all the issues that BEREC has identified in the Draft Report. ecta understands that the examples of NRA decisions indicated in the Draft Report, which are inter alia aimed at incentivizing efficiency, already consider (partially or fully) environmental sustainability objectives.

ecta sees the French New Deal case, which falls under spectrum framework of the EECC, as clear proof that NRAs are perfectly capable to pursue environmental sustainability objectives within the existing framework and using regulatory tools available. They claim it is a success story not only for its effect of maximizing spectrum, network and cost efficiency, but it also maximizes the environmental sustainability.

ecta notes that infrastructure sharing is an important tool for the operators to reach several efficiencies: not only in terms of cost, coverage, quality of service (and related consumer welfare), but also efficiency related to environmental sustainability. In fact, infrastructure sharing has the potential for positive environmental impact in terms of reducing both embodied emissions from hardware and operational impacts from energy consumption and cooling. At the same time, there appears to be a certain degree of forward-looking trade-off between (mobile) telecoms infrastructure and the sustainability objectives: higher network densification required by 5G technology, if not accompanied by adequate solutions, is likely to increase the energy consumption and encounter issues such as a lack of available locations to install antennas, especially in urban areas.

ecta suggests that this is the reason why numerous sharing agreements are in place today, based on commercial agreements without any regulatory intervention, and there will likely be more agreements in the future. ecta expects that mobile network sharing agreements and deals with tower companies on mast sharing - which European mobile network operators started to sign many years ago with the beginning of 3G network deployments - will probably become an even more attractive option for the operators, especially with the advent of 5G networks and for the achievement of common environmental goals. GSMA agrees with BEREC that it would be beneficial to better understand the positive environmental impacts and weigh these benefits against any potential competition concerns. Nevertheless, developing a uniform 'methodology' could proof challenging. GSMA urges BEREC to maintain a flexible approach, ensuring that any methodology can accommodate diversity across regions, markets, and technologies while supporting informed decision-making.

GSMA encourages BEREC to compile existing studies analysing the environmental benefits of infrastructure sharing to inspire innovative approaches and to conduct or commission new studies to quantify the environmental benefits listed in the report, using different scenarios of traffic growth and network evolution.

GSMA notes that regarding data collection by BEREC and NRAs, BEREC should consider the already intricate framework of sustainability reporting obligations. They point out that the

report mentions some countries, e.g. France, impose specific environmental protection obligations. The report also suggests that while the absence of a clear mandate for NRAs to enforce environmental objectives at the EU level does not seem problematic, further guidance could be useful. GSMA claims that as seen in France, it is essential to streamline and clarify reporting obligations, in particular when data requests to electronic communication providers come from multiple sources (e.g. different agencies or authorities, compliance with different laws).

GSMA believes that infrastructure sharing is, and should remain, voluntary to ensure competition and market-specific flexibility. Imposition of sharing on sustainability grounds can reduce competition in the ubiquity of access. Mobile Network Operators (MNOs) need flexibility to decide what is in their balanced interest depending also on market specificities.

GSMA notes that the points about the lack of data and measurement tools for MNOs to gather sustainability metrics are well made. However, they remind BEREC that TowerCos would also need to provide operators with relevant data on energy consumption and other sustainability indicators to enable comprehensive assessments.

GSMA suggests that while sensitivity in urban planning for historical and cultural reasons is important, regulatory measures should not inadvertently hinder sustainability. Regional authorities should incentivize sharing with common civil works and structures rather than limiting EIRP (cell/mobile power levels).

MVNO Europe welcomes BEREC's analysis of existing practices by NRAs in the application of EU legislation and believes that the related prospective view is very informative.

In this chapter, BEREC presents the existing practice of the member NRAs. The analysis was based on an internal questionnaire covering the implementation (by the NRAs) of Article 44 of the EECC, of other regulatory provisions with respect to infrastructure sharing, environmental considerations in network operators agreement, quantitative data available to the NRAs and a strategic prospective assessment.

BEREC notices that the responding stakeholders consider the current legal framework sufficient to allow NRAs to take actions related to the environmental aspects of infrastructure sharing. They commonly point out the French case ("Mobile New Deal"), nevertheless, there is not a common understanding of its positive outcome. Also, it must be recalled that the French data collection is based on unique national legislation and thus, BEREC cannot endorse the claim that, consequently, the current EU legal framework is sufficient.

Regarding the point raised on urban planning and EIRP levels, BEREC acknowledges that there are issues to be tackled, but that these are handled at national level within the EU framework (i.e. BCRD objective), taking also into account NRAs' mandates.

BEREC understands that there is a need to find a balance between the need of robust data to assess the environmental impact of ECNs and the risk of overburdening operators. In general, BEREC has repeatedly called for a harmonised EU approach to avoid duplication of work, reporting obligations and variety of requested data by the NRAs.

V. CHAPTER 4: Views of stakeholders (e.g. industry associations)

Connect Europe finds the assessment of the regulatory framework (EECC, BCRD, GIA) valuable but lacking in identifying barriers caused by differing regulatory obligations. They advocate for implementing measures to address these inconsistencies.

Regarding infrastructure and fibre sharing, they suggest BEREC should further consider the complexity of legal requirements. They also highlight that subsidies for fixed networks often result in unnecessary infrastructure, reducing sustainability when unused.

They stress that infrastructure sharing should be operator-led, not legally mandated, as compulsory sharing could undermine competition, innovation, and dynamic efficiencies—core principles of telecom regulation. Instead of extending legal obligations in the EECC review and Digital Networks Act, they recommend incentivizing voluntary sharing while allowing operators full discretion in investment decisions based on market conditions.

Connect Europe urges a balanced approach between environmental considerations and competition concerns, emphasizing that operators already have incentives to optimize sharing for both sustainability and economic efficiency. They warn against adding further regulatory objectives, as it would increase bureaucracy and contradict the EU's pledge to reduce red tape. Additionally, they worry this could set a precedent for introducing similar mandates in future legislation.

Lastly, they believe BEREC should explicitly recognize the role of environmental benefits in merger assessments, considering sustainability within merger control evaluations. They argue that network sharing is often assumed as a counterfactual in antitrust analysis, but in reality, some sustainability benefits can only be achieved through mergers.

ecta stated in its presentation at the BEREC workshop that the EU regulatory framework already offers several substantial provisions to support infrastructure sharing, and that established competition rules can allow for operators to engage in infrastructure sharing agreements should they wish to do so.

First and foremost, ecta notes that most telecommunications operators are already setting ambitious net-zero targets for themselves, so they are already intrinsically motivated to take any action that will help them achieve these targets

EWIA appreciates the opportunity to be involved in the stakeholders' workshop organized by the BEREC Sustainability Working Group and the fact that their input to the workshop is well reflected in the draft report.

Since the draft Report emphasizes that "*the benefits of infrastructure sharing have to be weighed against potential technical, legal and regulatory issues in terms of service, competition and investment*", EWIA emphasizes that the neutral host model followed by its TowerCo members is a successful way to reap the sustainability benefits of passive infrastructure sharing, while at the same time delivering significant economic savings, developing new sources of financing and fostering competition, market entry and innovation.

This was illustrated in a recent study by EY-Parthenon "The economic contribution of the European TowerCo sector" [2].

GSMA supports voluntary RAN sharing agreements as an effective way to balance investment needs with improved mobile coverage and minimal environmental impact. These agreements help to reduce the number of mobile sites, lower energy consumption, and contribute to EU environmental goals without compromising service quality.

They note that while network sharing agreements provide benefits, in-market consolidation can sometimes achieve even greater environmental and operational efficiencies by streamlining decision-making and optimizing networks. A more flexible approach to consolidation, especially in investment-challenged markets, could unlock these benefits where voluntary agreements may not suffice.

GSMA recommends that BEREC explicitly recognize environmental benefits in merger analysis, emphasizing that merger synergies can play a crucial role in advancing sustainability goals. MVNO Europe requests an addition, in the final report, reflecting the fact that wholesale access by Mobile Virtual Network Operators (MVNOs) to the networks of MNOs contributes to financing mobile network infrastructure, whilst avoiding costly duplication of network assets. Enabling and promoting MVNOs can be considered as contributing to infrastructure sharing and to spectrum sharing, is by far more environmentally responsible than promoting the build-out and operation of additional parallel physical mobile infrastructures. It is thus consistent with the twin green and digital transitions.

MVNO Europe is not in favour of the addition of a new environmental sustainability objective in sector-specific legislation, either through the forthcoming evaluation of the EECC or by means an expected Digital Networks Act.

This Chapter presents the views of stakeholders who participated in the technical workshop, namely Connect Europe, ECTA, and EWIA, on key aspects of infrastructure sharing. Their contributions focused on four main areas: the current regulatory framework governing infrastructure-sharing agreements, the commercially driven incentives shaping infrastructure-sharing decisions, the role of policies and regulation to support the environmental and economic impact of infrastructure sharing, and prospective considerations in light of virtualization and cloudification trends. The chapter aims to accurately reflect these stakeholders' perspectives and provide a comprehensive overview of their positions on these issues.

In their responses to the public consultation, stakeholders did not specifically comment on how BEREC reflected their views in Chapter 4. This suggests that they consider the chapter to be a fair and accurate representation of the discussions held during the workshop. The absence of direct remarks on this aspect indicates that stakeholders generally find their positions adequately conveyed in the report. Where stakeholders provided additional remarks beyond those expressed during the technical workshop, BEREC has duly taken them into account. These comments have been considered in the broader analysis of infrastructure sharing, ensuring that evolving perspectives and new insights are reflected in the report.

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[2] https://ewia.org/wp-content/uploads/ey-parthenon-european-wireless-infrastructure-report-2024.pdf

Furthermore, the contributions received from stakeholders who did not participate in the technical workshop, namely GSMA, MVNO Europe and AIIP have also been considered. For instance, in its response, GSMA has referenced a study from NGMN "Green Future Networks: a roadmap to energy efficient mobile networks" in which an active RAN sharing case study shows that MNOs benefits from approximately 30% energy OPEX savings. BEREC has already taken into account these perspectives into its assessment, ensuring that the final report provides a balanced and comprehensive view of stakeholder positions on network sharing.

VI. CHAPTER 5: Conclusions and future work

AIIP agrees with BEREC's conclusion that minimizing the environmental impact of network deployments is crucial and that infrastructure sharing can help achieve this. However, AIIP emphasizes that this goal should be a by-product of strengthening rules that mandate or encourage network sharing to promote efficient investment and accelerate VHCN deployment, rather than making environmental sustainability the primary objective of regulatory changes. AIIP also agrees with BEREC statement that "*the benefits of infrastructure sharing have to be weighed against potential technical, legal and regulatory issues in terms of … competition*" (p. 37). However, according to AIIP, regulation should only be focused at maximizing the possibility of sharing both active and passive elements of network infrastructure, while any concerns regarding competition being constrained should be left to the ex-post intervention of National Competition Authorities, if necessary.

AIIP acknowledges BEREC's recognition that EU law provides balanced rules for infrastructure sharing in fixed networks, particularly through efficient civil works coordination. AIIP emphasizes the need to improve disaggregation provisions to reduce installation work, benefiting both the environment and network resilience. It calls for clarification that when physical access to ducts or infrastructure is not feasible due to technical or capacity issues, regulators should allow access to dark fibre to prevent inefficient and harmful duplication. Additionally, AIIP urges regulators to focus more on granting access to active network elements, especially when passive infrastructure is saturated.

AIIP notes that, as to mobile networks, BEREC points out that "*it appears that the current European framework does not foresee the ability to formulate infrastructure sharing obligation for mobile networks, outside spectrum allocation*". AIIP therefore deems it necessary that focus should be primarily given to sharing active and passive elements of mobile networks, including by providing specific access obligations at wholesale level. This focus on sharing should be not only for granting environmental sustainability and to avoid duplications and inefficiencies, but also to promote integration of both fixed and mobile networks and convergent services on a symmetric path (i.e. also from fixed to mobile and not solely from mobile to fixes, as of nowadays).

Finally, in order to ensure an adequate level of service differentiation and to promote tailored services to the end users, AIIP points out that any regulation relating to the sharing of active and passive elements of fixed and/or mobile networks should leave operators free to negotiate for different terms and conditions of SLAs, such as network maintenance and problem resolution.

Connect Europe and GSMA both note that the NGMN study[3] supports BEREC's conclusion that overall voluntary infrastructure sharing reduces the energy consumption by 30% depending on whether telecom operators share passive or active infrastructure, and whether the sharing is partial or complete (i.e., covering the entire territory). For the environmental benefits of network sharing agreements to be fully realised, the scope of the agreement plays an important role. The larger the geographic area covered by active sharing, the more effective the sharing will be in terms of environmental benefits.

Connect Europe would encourage BEREC to compile existing studies analysing the environmental benefits of infrastructure sharing to inspire innovative approaches. For example, the study "Network Sharing and its Energy Benefits: A Study of European Mobile Network Operators" concludes that infrastructure sharing can reduce the energy required to operate mobile networks "*by 35% to 60% compared to scenarios where each operator manages a separate network*". Along the same lines, they encourage BEREC to conduct or commission new studies to 1) try to quantify the environmental benefits listed in Table 2, p. 36, of the report, using different scenarios of traffic growth and network evolution 2) on the interplay between resilience and sustainability. Relying primarily on sustainability criteria might undervalue the importance of network resilience and gathering more data on how to achieve the right balance between resilience and sustainability would be valuable. Connect Europe believes that these points should receive due consideration to enhance the legal framework for operator-led network sharing, as they could bring more legal certainty to market actors and support both the environmental and competitive benefits that network sharing can deliver.

ecta invites BEREC to exercise caution in advocating for the inclusion of environmental sustainability as an objective in the revision of the EECC, as proposed in BEREC's draft report. ecta stresses the trade-offs between sustainability—particularly in network sharing agreements—and its key priorities: competition and consumer welfare. ecta believes infrastructure sharing, regulatory harmonization, and defining standards to assess network sharing's benefits can be achieved without expanding NRAs' mandates or adding sustainability as an EECC objective. Instead, harmonized NRA practices, industry workshops, carbon footprint studies, and end-user awareness programs could address these goals. A targeted EECC revision, streamlining existing instruments and defining standards of proof, could further help NRAs tackle BEREC's concerns without extending their remit. ecta also highlights that current NRA decisions already factor in sustainability, considering efficiency incentives both at the operator level (e.g., network and cost management) and industry-wide (e.g., avoiding network duplication). It points to the French New Deal as a success story that maximizes spectrum, network, and cost efficiency while also delivering environmental benefits—all within the existing EECC framework. This, ecta argues, shows that NRAs can already pursue sustainability objectives using current tools.

ecta points out that any additional policy should be designed in a way that preserves competition, so as to to further unfold its beneficial effects for European telecommunications markets. On the same note, Connect Europe and GSMA both point out that in order to fully unlock the environmental benefits that infrastructure sharing can deliver, it is crucial to address competition enforcement obstacles. Furthermore, they believe it is also crucial to provide

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[3] https://www.ngmn.org/publications/green-future-networks-a-roadmap-to-energy-efficient-mobile-networks-2.html

greater legal certainty and a more secure and predictable regulatory environment to market players regarding mobile network sharing.

ecta urges BEREC to exercise caution when analyzing network cloudification and virtualization trends, as mentioned in the draft report. They argue that virtualized access solutions (i.e., APIs) should not be classified as network or infrastructure sharing.

They emphasize that effective wholesale access (both passive and active) remains essential, even as cloudification and virtualization advance. Such access enables operators to provide cloud and edge computing services while continuing to innovate at the virtual network layers.

ecta warns that restricting wholesale access for operators with Significant Market Power (SMP) in favour of API-based access could hinder innovation, disrupt technological advancements, and harm Europe's competitiveness by limiting growth in cloud and edge computing services.

EWIA supports the conclusions to consider the environmental dimension in future work by BEREC on infrastructure sharing. They remain at BEREC's disposal to contribute further to such work and share the experience of our members where needed.

Connect Europe and GSMA both believe that it is important to emphasise the preference for voluntary agreements that enhance synergies, rather than imposing obligations which may distort the market. Connect Europe suggests that the result of a sustainability action should not be to add new regulatory constraints and burdensome administrative processes for telecom operators, which would be in contradiction to the general trend of reducing the regulatory burden. GSMA highlights the environmental benefits of voluntary network sharing and emphasizes the potential role of competition policy in unlocking these benefits.

GSMA believes that regulatory frameworks should remain technology-neutral and flexible, allowing operators to adopt solutions that best align with their market conditions and strategic priorities. For instance, while OpenRAN and virtualised networks can enhance energy efficiency, their adoption must be market-driven rather than mandated.

GSMA believes that the objectives of BEREC's report objectives are valuable, however the document assumptions are built on outdated framework of network topologies, thus failing to reflect major market developments. It does not fully take into consideration the evolving telecom landscape, particularly the role of TowerCos and aggregation, the impact of fluctuating and increasing EU energy prices, and supply chain availability challenges. The legacy categories of active and passive sharing are less relevant now that MNOs are rolling out 5G SA with QoS provisioning, along with AI control of the RAN compute load that optimizes energy consumption.

GSMA suggests that the draft fails to address these major market developments. NetCo/TowerCos are mentioned briefly, but without acknowledgment of the major role these companies now play in infrastructure sharing mechanisms. Equally, there is little mention of OpenRAN, virtualized networks, cloud RAN, and MEC, which are technologies MNOs may or may not employ according to their market needs.

Private individual Mr Gonzalo Joao believes that the draft BEREC Report on Infrastructure Sharing as a lever for ECN/ECS Environmental Sustainability is very much focused on the

symmetric regulation (namely in the BCRD, which is replaced by GIA), instead of being focused on the SMP regulation of PIA, which is more detailed and relevant in the context of EU 27.

According to the stakeholder, the word "BCRD" is mentioned 21 times in this BEREC report, whilst the word SMP is only mentioned 2 times. He highlights that the PIA SMP regulation is even referred in the EC's White Paper as the market is still possible to be regulated under the ex-ante regulation (or via the 3-criteria test).

BEREC would like to thank stakeholders for their feedback on the report and its conclusions. It acknowledges a relative consensus on the core messages of the draft report and the key findings. In particular, all the stakeholders agree on the environmental benefits of infrastructure sharing.

BEREC considers that all key dynamics – competition, investment, and sustainability – are important and should be addressed in a balanced manner. Sustainability should be considered alongside broader policy objectives to ensure a holistic and effective regulatory approach.

On the view regarding access to passive and active network elements, and the potential need for regulatory clarifications to involve key aspects such as redundancy, resilience, efficiency, while ensuring that the service quality and user requirements are met, BEREC acknowledges that these factors must be carefully assessed in a balanced manner within the framework of relevant regulations. However, BEREC stresses that sustainability remains an important dimension alongside such critical objectives, ensuring that regulatory approaches support both network development and long-term environmental responsibility, for both fixed and mobile networks.

BEREC acknowledges the views expressed by Connect Europe and GSMA regarding the preference for voluntary agreements that enhance synergies and the importance of maintaining a flexible and technology-neutral regulatory framework. Voluntary measures can indeed play a role in fostering sustainability in the telecom sector, and competition policy may contribute to unlocking benefits associated with network sharing. However, the integration of environmental considerations into voluntary agreements remains limited, partly due to the absence of a clear mandate, expertise, and standardised guidelines. Such an approach would not necessarily imply additional administrative burdens but rather aim to provide NRAs with the appropriate tools to consider sustainability aspects effectively. In this context, additional EU-level guidance could help NRAs and competent authorities integrate sustainability considerations into their assessments without distorting the market, ensuring that regulatory approaches remain proportionate and aligned with broader policy objectives.

BEREC acknowledges ecta's concerns regarding the inclusion of environmental sustainability as an explicit objective within the EECC and the potential trade-offs with competition and consumer welfare. However, BEREC remains of the view that incorporating environmental considerations into the regulatory framework would be a beneficial development, as also suggested by the European Commission in its White Paper. While existing regulatory tools address sustainability to some extent, a clearer mandate for NRAs could enhance their ability to minimize the environmental impact of ECN/ECS. Expanding NRAs' capacity to incentivise or impose infrastructure sharing, where appropriate, could help achieve this while preserving

competition. The upcoming EECC review offers an opportunity to explore these measures further and ensure a balanced, future-proof regulatory framework.

Regarding the resource optimisation trends, BEREC remains committed to a thorough and balanced analysis, ensuring that any potential opportunities for resource optimization align with legal obligations and market dynamics. The importance of effective wholesale access is recognized, and BEREC will take these considerations into account in its future work and ongoing assessments.

BEREC acknowledges the perspective of Connect Europe and GSMA on the role of sustainability in assessing horizontal cooperation agreements and stresses the importance of integrating sustainability considerations into these assessments. While ensuring that competition principles remain safeguarded, BEREC sees value in explicitly acknowledging the environmental benefits of mobile infrastructure sharing, such as improved energy efficiency and reduced carbon emissions. The assessment of such agreements should evolve to reflect the wider policy objectives of the EU Green Deal, provided that sustainability efficiencies do not lead to distortions in market dynamics. BEREC supports a refined approach that considers both competitive and environmental benefits, ensuring that mobile network sharing contributes to both consumer welfare and broader sustainability goals.

BEREC acknowledges the rapid evolution of network architectures and infrastructure-sharing models, including the increasing role of TowerCos, OpenRAN, cloud-based solutions, and AI-driven network optimizations. However, emphasising distinctions, such as active and passive, remain relevant for regulatory assessment and policy discussions. While specific technologies are not extensively detailed, BEREC will continue to monitor their implications.

BEREC makes a reference to the relevant frameworks (ie., the EECC and BCRD) in Chapter 2 of its report, which facilitate infrastructure sharing and reduce deployment costs. BEREC recognizes the relevance of SMP-based regulation, including Passive Infrastructure Access (PIA) obligations, as an ex-ante tool to address competition concerns where necessary. SMP regulation is also taken into account in other BEREC reports, including the BEREC Report on the regulation of physical infrastructure access[4].

BEREC notes that a balance between environmental sustainability, competition, and consumer welfare issues is very important and has taken these aspects into account in its report.

BEREC acknowledges the interesting views and proposals raised by stakeholders in regards future work and invites them to participate in the call for topics for the BEREC Work Programme 2026, if relevant. Finally, BEREC commits to continue providing its expertise to collective efforts towards environmentally sustainable ECN/ECS, in support of EU's twin digital and green transition.

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[4] BoR (25) 77