BEREC
Body of European Regulators for Electronic Communications

BoR (23) 131b

BEREC's Response to the Exploratory Consultation

The future of the electronic communications sector and its infrastructure

19 May 2023

Contents

*BEREC has not responded to all questions in the questionnaire but has complemented its responses with a short 10-page document **and** additional documents, published as annexes to this response, on BEREC's website.*

Disclaimer – BEREC does not necessarily agree with some of the characterisations and terminology used in this questionnaire e.g., it may not be appropriate to suggest the current policies and practices related to radio spectrum present a barrier to the single market. In a similar manner, the term "large traffic generators" could be construed as a pejorative term and data is delivered at the request of end users. As such, these CAPs might better be labelled as large traffic suppliers (LTSs). Finally, the term "fair contribution", which is included in the original questionnaire is repeated in this document, but its use does not infer BEREC endorsement of the characterisation.

Introduction

BEREC welcomes the opportunity to respond to the exploratory consultation on the future of the telecom sector and its infrastructure, which targets a wide range of stakeholders. BEREC, therefore, has not responded to all questions and has refrained from ranking or assigning (relative) importance to the listed options, as some options may be assessed as equally important and also considering the uncertainty associated with long-term predictions. To support and expand on some of its responses, BEREC has also published two Annexes on its website.

BEREC is keenly aware of the requirement for sustainable, secure, and reliable electronic communications networks/services (ECN/S) as highlighted in the Digital Decade Policy Programme (DDPP), which encompasses the connectivity goals and calls for transformation of the sector. BEREC is also cognisant that the European Declaration of Digital Rights and Principles for the Digital Decade[1] (the Declaration) explicitly states that "*…all market actors benefiting from the digital transformation assume their social responsibilities and make a fair and proportionate contribution to the costs of public goods, services and infrastructures.*"

BEREC recognises that at current pace, not all Europeans may be able to avail of gigabit connectivity by 2030 and so welcomes the objectives of the Gigabit Infrastructure Act (GIA) and the Gigabit connectivity recommendation (GCR), and the impetus that these initiatives will give towards reaching the DDPP objectives (without prejudice to the BEREC analysis on the GIA and the BEREC opinion on the GCR). It is important to note that the other objectives of Art. 3 of the European Electronic Communications Code (EECC) are equally important, namely sustainable competition, interest of the European citizens and the development of the internal market for telecommunications.

BEREC welcomes the prominence given to sustainability in the consultation and supports having environmental protection as a significant objective shaping the future of connectivity, in line with the Green Deal targets to allow mitigation of all relevant adverse impacts related to the digital sector.

BEREC is mindful that the investment requirements to achieve the connectivity objectives of the DDPP will vary for each Member States (MS) and the collection and evaluation of relevant data will be required to better quantify and qualify the issues at stake. BEREC is committed to continue the work on the issues raised in this consultation and has a number of relevant projects in its Work Programme 2023[2], including, a report on the IP-Interconnection (IP-IC) ecosystem, which it will publish in 2024 after collecting relevant data. BEREC also looks forward to the EU Commission sharing the data it receives from this consultation, which will allow BEREC to carry out quantitative assessments that will facilitate a deeper understanding of the topics under discussion. Finally, BEREC recognises a potential dispute-resolution role for NRAs between CAPs and ISPs as well as the need for regular and long-term market monitoring through relevant data collection (e.g., environmental impacts of the digital sector,

[1] https://digital-strategy.ec.europa.eu/en/library/european-declaration-digital-rights-and-principles

[2] Ref project 2.8 in BEREC Work Programme 2023 and other relevant projects impacting the Internet ecosystem, including a study on the evolution of the competition dynamics of tower and access infrastructure companies, a report on the entry of large CAPs into the ECN/S markets, and an external study on the trends and policy/regulatory challenges of cloudification, virtualisation and softwarisation in telecommunication.

investments in digital infrastructures, IP traffic volumes) and remains ready to contribute in this regard.

1. Technological and market developments

1.1. Technological Developments and New Market Models[3]

The latest technological trends are changing the way we communicate, while also adding complexity and reshaping the internet ecosystem with the entry of new players (sometimes moving upwards along the value chain e.g., the entry/presence of large CAPs in ECS/ECN market[4]), the changing roles of traditional players, the creation of new competition bottlenecks in the value chain and the removal of others. Among these trends, BEREC highlights the following:

- Several market and technological trends are blurring and reshaping the traditional boundary between ECN and ECS and digital services; the growing substitution of number based (NB) and number independent (NI) interpersonal communication services (ICS); the tendency to bundle connectivity with digital services; increasing integration across the internet ecosystem (including key elements like operating systems (OS) and cloud services); increasing network virtualisation and cloudification or the development of artificial intelligence (AI) solutions.
- ECN/S developments are not only taking place in the last mile segment. Network architectures are also evolving, and the Internet of tomorrow will likely require additional infrastructure investments to support the upcoming developments (e.g., investments in cloud and edge nodes) and the increasing importance of cybersecurity.
- The development of some new technologies (e.g., AI or cloud) require access to inputs, including access to unbiased and reliable data, a specialised workforce or cloud services and infrastructures. Should these inputs be concentrated in only a few enterprises, the resulting dependencies may have implications in terms of competition, end-users' rights, EU sovereignty, security, sustainability, and network resilience. However, new EU legislation is intended to address some of these issues.
- New technologies may unlock advantages for ECN/S providers such as the development of new innovative and differentiated products and use cases, increasing customers' demand for enhanced connectivity, evolution towards diversified and integrated offers thanks to their role as enablers of IT and data processing-based services and the benefit from the CAPEX/OPEX reduction enabled by new technologies (e.g., AI). However, these opportunities are also linked with challenges, as the evolution towards IT, data-processing and virtualised networks also attracts new competitors.
- Significant additional investments will be required to meet the DDPP policy objectives. Those investments may be impacted by several diverse factors, including economic (such as scarcity of construction capacity, lack of consumer demand), financial (e.g., markets

[3] This sub-section addresses questions Q2, Q3, Q4 and Q5. Further elaboration to these responses can be found in an Annex published on BEREC's website

[4] Ref project 2.5 in BEREC's Work Programme 2023

preference for longer term investments) technical and competition-related ones e.g., BEREC's report on the Internet Ecosystem[5] and BEREC's Report on the 5G Ecosystem[6] identified potential bottlenecks related to the evolving role of big tech companies and ECN/S providers across the Internet ecosystem.

1.2. Environmental Sustainability[7]

Digitalisation could be a key enabler of the green transition thanks to its potential contribution to the decarbonisation of other sectors of the economy. However, the carbon footprint of the ICT sector, estimated to represent 2 - 4% of global greenhouse gas (GHG) emissions, and digital value chains are responsible for other forms of impacts on the environment, such as the consumption of raw materials, water consumption or the generation of e-waste. Thus, effective measures must be designed to ensure that the digital transition is environmentally sustainable and cross-sectoral effects are sufficiently considered.

BEREC supports the wide adoption of a multi-criteria life-cycle analysis to allow mitigation of all relevant adverse impacts related to the digital sector. Promoting sustainability in the ICT sector requires increased environmental accountability of all relevant parties of the Internet ecosystem (e.g., devices and equipment manufacturers/providers, data centres, telecom operators and content and application providers (CAPs)) in a manner that sets the right incentives for industry players and users.

It is encouraging to see that environmental concerns are considered before the advent of new network technologies. However, it is not yet possible to conclude on the overall environmental impacts of these technologies, as they are not yet fully deployed. Regarding the footprint of digital services, proper eco-design criteria are also required to minimise the footprint of infrastructures and devices and vice versa.

BEREC believes that the focus on energy consumption in network operations in the questionnaire sets a relatively narrow scope, as it omits other elements of the Internet ecosystem, in particular devices, which represent the majority of the environmental footprint of the sector. Volume of data traffic is only one aspect which influences the energy consumption of ECNs and the significance of this metric in the operation of networks is a complex question, which deserves detailed analysis. Newer and more energy-efficient technologies and equipment can limit the increase of energy consumption of digital infrastructures and associated GHG emissions particularly for fixed networks (i.e., fixed fibre networks are associated with less operational emissions than mobile networks). At the same time, increased data traffic is driving the deployment of new infrastructures that could generate increased environmental impacts, especially as the different elements that compose the digital ecosystem are interdependent; the deployment of new networks involves growth of data centres infrastructures and terminal devices. Furthermore, energy efficiency gains can be associated with rebound effects inducing increased data consumption. Hence, deployment of greener infrastructures and of digital services, sustainable by design, could help to achieve environmental targets but data traffic alone is not the appropriate indicator to monitor such efforts.

[5] BoR (22) 167 BEREC Report on the Internet Ecosystem
[6] BoR (22) 144 BEREC Report on the 5G Ecosystem
[7] This sub-section addresses questions Q6 and Q7

The complexity of the Internet ecosystem and its environmental impact require robust assessment methodologies, with common sustainability indicators based on standardised data. Therefore, a robust mandate for NRAs to collect environmental data would contribute to the environmentally sustainable development of the sector.

1.3. Business transformation[8]

As regards future developments, such as dedicated infrastructure management companies, network slicing, private local networks, or the emergence of virtual network operators, all of these are relevant factors for, among others, competition, and innovation, and have an impact on the ECNs' architecture and their functions. Besides the opportunities presented by the new technologies and business models outlined above, these developments may also raise a series of regulatory concerns such as anti-competitive practices, growing network concentration, discrimination of access seekers, etc. Thus, it makes sense to monitor some of these emerging business models. Accordingly, BEREC has commissioned an external study on the evolution of the competition dynamics of wholesale tower and access infrastructure companies, to further assess their impact on the ECN/S sector. Also, BEREC has recently published an external study on wholesale mobile connectivity, trends and issues for emerging mobile technologies and deployments.[9]

BEREC emphasises that cooperation among the various actors in the ecosystem is a key component to achieving the DDPP objectives. This cooperation may take several forms, depending on the market type, the level of investment needed, and the actors involved, but it is important that any arrangement preserves the competitive landscape and assures a level playing field for the parties concerned, which may require regulatory intervention.

Despite the increasing potential for traditional ECN/S providers to expand their portfolio to include digital and IT services, BEREC is of the view that residential and business ECN/S will continue to be the main source of revenue for ECN/S providers in the coming years. Therefore, the recurrent revenues of ECN/S providers should be able to keep financing future network investments. BEREC considers that competition is the key driver of investment, for which ex-ante regulation is considered relevant. Where possible, infrastructure-based competition should be promoted. The need for additional tools to tackle tight oligopolies may also be necessary as BEREC has previously highlighted.[10]

In areas in which there is a recognised lack of demand or absence a business case for very high-capacity networks (VHCN) rollout, other measures (among which state aid and/or voucher schemes) can be appropriate options in certain circumstances[11] to foster network deployments. The relative importance of the rollouts in those areas is expected to increase in the future, giving weight to reflections on the appropriateness of the means of intervention and necessary funding, e.g., state aid schemes.

---

[8] This subsection refers to Q9, Q13, Q14, Q16, Q17, Q18, Q19

[9] BoR (23) 41BEREC Study on wholesale mobile connectivity, trends and issues for emerging mobile technologies and deployments

[10] BoR (17) 84 BEREC views on non-competitive oligopolies in the Electronic Communications Code

[11] BoR (22) 16 BEREC response to the public consultation on the draft revised European Commission Guidelines on State aid for broadband networks

2. Fairness for consumers

2.1. End-users' protections and Universal Service[12]

The EECC seeks to support end-users' protection by ensuring they have appropriate tools to allow them to make informed decisions. Such a focus on transparency for the end-user should be maintained as it provides an essential element to promote digital inclusion.

Many areas of social life increasingly depend on ECN/S. Hence, the safety net provided by a universal service obligation (USO) ensures access to an adequate broadband service at an affordable price, in light of national conditions and the minimum bandwidth enjoyed by the majority in order to provide for social and economic participation in society. BEREC considers US provision or specific public social policies targeted at consumers with low income or with special social needs have proved to be an important measure to avoid or bridge the digital divide and the consequent social and economic exclusion.

The implementation of the USO varies significantly among MS since: (1) adequate Internet access is defined differently according to the current infrastructure deployment in each territory and (2) in some MS the market already provides adequate broadband internet access service (IAS), so there is no need to designate a US provider, whereas, in others, the US provision is used as a policy tool to ensure adequate IAS in remote/underserved areas, or to tackle affordability issues. BEREC considers that MS should be able to maintain such flexibility regarding the implementation of the US provisions considering national specificities and specific end-users' needs. Further, the existing mechanisms of US financing are currently appropriate (public general budget and/or financed by the ECN/S providers).

The scope of US has evolved, and the benefits of the most recent change cannot yet be fully assessed. Furthermore, in the time horizon set out in the questionnaire, the list of minimum services[13] that comprise an adequate broadband IAS might need to be further reconsidered. In addition to analysing whether any services should be added to the US list, it may also be necessary, subject to a careful assessment, to consider whether some categories of end-users (e.g., elderly people or less digitally skilled citizens) should also be included because gaining access to digital/online services might become more complex over time.

2.2. Funding outside USO[14]

The USO regime covers only basic broadband needs, which are limited to certain services and mainly target remote areas where the commercial network deployment or the provision of services is not viable. Regulatory tools, such as the USO, designed for digital and societal inclusion should not be mixed or confused with instruments intended to achieve future connectivity ambitions, as defined by the DDPP goals. To eliminate the digital divide, especially in rural areas[15], multiple Union options, such as the Recovery and Resilience Facility (RRF) funds, Cohesion Funds, as well as national regulatory tools may be used.

[12] This sub-section relates to Q22-27
[13] Adequate broadband quality parameters are set out in Annex V of EECC
[14] This sub-section relates to Q28-30
[15] Digital Economy and Society Index Report 2022 – Connectivity chapter

In addition, BEREC highlights several legislative and regulatory instruments, established to facilitate private investment in the rollout of broadband networks (including VHCN), such as the EECC (e.g., Art. 3(2)(a)), Art. 61(3), Art. 76), the Broadband Cost Reduction Directive[16] (BCRD), the Common Union toolbox for Connectivity and the recent legislative proposal for a GIA and the draft GCR.

In addition, according to a BEREC-commissioned study on post-Covid measures to close the digital divide in 2021,[17] experts consider that more innovative funding models should be implemented to roll out broadband infrastructure in areas with a low return of investments (ROI), including: (1) co-investment models between operators and investment funds; (2) municipal financing models involving the municipality which wants to bridge the digital divide, investors, and lenders; (3) pooled financing. Therefore, BEREC considers that public intervention should be clearly regarded as a subsidiary instrument in cases where private investments are insufficient to meet end-users' connectivity needs.[18] It should be ensured that the contribution provided by any fund, if used for network deployment, is necessary and proportionate to the objectives pursued in order to avoid distortions in competition.

In this regard, if a specific EU-wide fund outside USO were to be considered in the future, contribution to such a fund should be dependent on the yet to be defined goals and its proposed functioning would have to be assessed in detail, including, funding objectives, scope of contributors and a clear definition of beneficiaries.

3. Barriers to the Single Market

3.1. Single market for ECN/S and digital services[19]

BEREC believes that there are no technical or regulatory obstacles to providing EU services as the regulatory and/or commercial options currently available are fit-for-purpose and would also allow building of pan-EU offers. The reasons why ECN/S providers choose not to provide pan-EU offers are largely commercial (e.g., cultural differences, diverse market circumstances making the establishment of homogeneous wholesale access products on SMP operators neither suitable nor required) rather than because of any technical or regulatory barriers.

Furthermore, VHCN being rolled out at supra-national scale is not expected to bring any significant cost savings and efficiencies determined, *inter alia*, by the scale of their operation. Economies of scale can be largely reached at subnational level for fixed networks, while at national scale for mobile networks. In addition, BEREC does not see any evident obstacles to cross-border consolidation in relation to VHCN as the main driver of the scale of activity is not grounded in technical, legal and/or administrative "burdens".

Moreover, BEREC does not envisage any major obstacle to the full integration of the single market for electronic communications stemming from the rules governing the general authorisation (GA) regime. The GA scheme has operated efficiently, without creating barriers

[16] Directive 2014/61/EU of the European Parliament and of the Council of 15 May 2014
[17] BoR (21) 138 Study on post Covid measures to close the digital divide ()
[18] BoR (22) 16 BEREC response to the public consultation on the draft revised European Commission Guidelines on State aid for broadband networks
[19] This subsection relates to Q32-35

for operators to enter national markets and any remaining differences in the operation of the GA regime may be attributable to other legal instruments not related with the EECC/GA regime (e.g., constitutional, administrative, and criminal law constraints)[20]. The very nature of the electronic communications markets is such that they do not have a prevalent cross-border dimension, as networks and consumption models are intrinsically local or national and may differ substantially from one country to another. That is why the current GA regime (requiring a common and harmonised notification to the national regulatory authority/competent authority (NRA/CA) of the MS where the services are provided) is appropriate to reduce administrative bureaucracy, while at the same time, ensuring national supervision of market players by NRAs.

The integration of the single market for electronic communications may seem to be limited in comparison to the convergence of online services in the digital ecosystem. This, however, is mainly based on the differing market conditions for traditional ECN/S and digital platforms services. In addition, a singular set of rules, applicable to players in the digital platforms' environment, regardless of the MS in which they are established, is the approach taken in the recently adopted Digital Markets Act (DMA) and Digital Services Act (DSA). The Country-of-Origin (CoO) principle, on which the DSA supervision is based, though appropriate for digital services, is not appropriate for the traditional ECN/ECS providers since NRAs – who monitor the ECS targeting end users in its own MS – would be unable to enforce relevant rules against an ECS provider established in another MS. BEREC also deems it appropriate that the EU legislation under which online digital platforms services are supervised, provides adaptations of the current CoO principle, which would allow NRAs to monitor services provided to end users in each own MS and enforce relevant rules.

BEREC is committed to its harmonisation role for the benefit of European citizens but notes that consolidation requires careful analysis in all MS given its potential negative impact on competition. In this regard, it is important to state that the internal market of ECS should be competitive and not be dominated by "national champions".

3.2. Radio Spectrum[21]

BEREC considers that radio spectrum is a scarce natural resource with many competing uses and must be managed effectively and efficiently used to maximise benefits to society. Radio spectrum propagates beyond national borders, but spectrum allocation and assignment are national functions.

Nonetheless, spectrum management requires active engagement in European and global spectrum management developments. BEREC believes that at the European level, engagement, integration, co-operation, and information exchange are also supported through existing tools that improve market opportunities.

Several EECC articles already provide a framework for harmonised approaches (53, 54), cross border interferences management at the request of the MS (28) peer review and sharing best practices, which contributes to harmonisation (35). Additionally, BEREC supports

[20] BoR (21) 178 A comprehensive assessment of the current GA regime can be found in the "Opinion on the national implementation and functioning of the general authorisation, and on their impact on the functioning of the internal market, pursuant to article 122, paragraph 3 EECC"

[21] This subsection relates to Q36-39

improved communication between all stakeholders, including internal communication between all arms of the Commission, Member States representatives, and NRAs, which will help enshrine service and technology neutral policies.

It is not clear then how smaller operators would benefit from changes to the current framework. Changes may increase uncertainty for smaller operators because they mostly compete at a (sub)-national level and their needs may be underserved by a *"(more) integrated market for radio spectrum"* (the meaning of which is not defined in the questionnaire) in the EU. Similarly, requirements of smaller MS may be underserved by such an approach.

An important context is that efficient award procedures are based on objectives and market circumstances. It is very likely that both vary across MS because of different market structures and conditions (competition, market demand, coverage, topological conditions, etc.). Radio Spectrum Policy Group (RSPG) previously published a report on efficient awards, which concluded that there is no "one size fits all"[22] and BEREC considers that this conclusion is still valid to support market evolution.

At this time, the areas in which a "*common EU-level licensing/political scheme"* for spectrum use (the scope of which is not defined in the questionnaire) would be most useful cannot be easily identified. BEREC considers that even satellite communications and vertical use cases, mentioned in the questionnaire, would need careful consideration and consultation and, in terms of costs, BEREC considers that more data would be required to assess impacts on all stakeholders before any such EU-wide initiatives are developed.

Moreover, an EU-level award procedure for terrestrial mobile ECNs, including vertical use cases that seeks to take all national circumstances into account might result in overly complex procedures, which might not be efficiently managed by operators or administered across the EU level. Harmonisation at the technical level, which is already possible in the current framework, is, key to making efficient spectrum use and could be strengthened. Besides, whatever the purported benefits of an EU-level award procedure might be, these should not be to the detriment of equitable access to radio spectrum at the national level.

4. Fair contribution by all digital players[23]

4.1. Gigabit society and the internet ecosystem

The Declaration mentions that EU institutions "*commit to developing adequate frameworks so, that all market actors benefiting from the digital transformation (…) make a fair and proportionate contribution to the costs of public goods, services and infrastructures for the benefit of all people living in the EU*". Therefore, it is clear in BEREC's view that the entire Internet ecosystem should be included when considering policy options. Likewise, it should be noted that the "contribution" is not limited to the notion of financing access networks only. Currently, actors contribute in different ways to the Internet ecosystem: some provide access, backhaul or core networks, others digital infrastructures or IP transit services, others content, applications and services, and others again provide digital skills, or a combination thereof. All invest, and thereby partake, in the digitalisation of society and the economy. Admittedly,

[22] RSPG16-004
[23] This section refers to Questions 52-62, inclusive

working towards the DDPP objectives, will foreseeably cause a growth of data traffic. BEREC noted in its preliminary assessment[24] that "…*fixed access networks costs exhibit a very low traffic-sensitivity, while mobile networks experience some degree of traffic-sensitivity."* In this context, BEREC considered that there is only a limited relationship between the growth of data traffic volume and the level of investments that must be made to reach a gigabit society and meet the purported increasing network costs. Moreover, the largest cost elements for network deployment relate to the access network. These costs are typically recovered through access subscriptions[25]. However, BEREC is looking forward to receiving the data gathered by the EU Commission through this consultation, which will allow for further quantitative assessment of its positions on the aforementioned matters (cost drivers, etc.).

4.2. Gigabit connectivity for all deserves targeted solutions

BEREC holds that any regulatory intervention requires a proper justification. BEREC is currently not aware of structural interconnection problems in relation to growing volumes of traffic attributed to CAPs[26] but BEREC will conduct further analysis in its upcoming report on the IP-IC market[27]. BEREC found that interconnection agreements were typically reached without regulatory intervention and has previously cautioned on whether regulatory intervention is actually warranted.[28] BEREC considers that the Internet ecosystem, has managed to adapt IP-interconnection arrangements to changing conditions, such as increasing traffic volume[29]. Therefore, BEREC has not detected a market failure or market power exercised to the detriment of end-users[30] in the IP-IC market but remains open to further assessment upon receiving any relevant data gathered through this consultation or its own relevant workstream. It appears that the significant increase in investments into VHCN calls into question whether a lack of funding is causing a slowdown in network expansion. Moreover, if the deployment of internet access infrastructure is not commercially viable in all cases, public funding provides an appropriate tool to address these concerns.

In considering options to further address the rollout of gigabit IAS, BEREC suggests the focus to be on the access markets and remedying other practical and legal factors that have proven to raise barriers and cause delays.[31]

4.3. Financial contributions from large CAPs to ISPs

BEREC has expressed reservations[32] about mandatory financial contributions from CAPs to ISPs in the form of a sending party network pays (SPNP) regime. Regarding other forms of contribution mechanisms (e.g., funding mechanism), concerns may arise, but any proposed functioning would have to be assessed in detail and BEREC remains available to contribute

[24] BoR (22) 137 BEREC preliminary assessment of underlying assumptions of payments from large CAPs to ISPs, preliminary finding nr. 7
[25] BoR (22) 137 Chapter 3
[26] BoR (22) 137 Chapter 5
[27] BEREC Work Programme 2023, project 2.8
[28] BoR (17) 184 BEREC Report on IP-Interconnection practices in the Context of Net Neutrality
[29] BoR (22) 137 Chapter 1
[30] BoR (22) 137 Chapter 1
[31] e.g., for building permits, roadwork authorizations and subsidy granting, the availability of information (e.g., to municipalities, investors, and operators) and lack of consumer demand (e.g., when current infrastructure meets the needs of consumers)
[32] BoR (22) 137 BEREC preliminary assessment of underlying assumptions of payments from large CAPs to ISPs

to the evaluation of any material proposal that may arise. BEREC notes that such other contribution mechanism would also need to be objectively justified, with clearly defined targets. BEREC describes below issues that should be included in the analysis of possible regulatory interventions (in the event that a need to intervene is identified).

Competition: The introduction of a mandatory financial contribution from large CAPs to ISPs may distort competition between market actors. Smaller ISPs are likely to be at a competitive disadvantage compared to large ISPs, in particular because of their smaller number of end-users and their lower bargaining power. Large CAPs typically provide commercial content delivery networks (CDN) and cloud services. Thus, they could pass on higher costs to their customers. This would then not only affect for instance smaller CAPs, but also business users, in particular SMEs.

Moreover, the introduction of a sending party network pays (SPNP) regime implies that it would become possible for ISPs to exploit the physical termination monopoly, which would make regulation of the IP interconnection market necessary in the first place.

End-users: BEREC has not discovered any evidence that operators' costs were not fully covered, and neither is there any evidence of "free-riding".[33] Thus, an additional financial contribution from large CAPs to ISPs via a SPNP regime could advantage ISPs, but the utilisation of such an additional financial contribution would be uncertain. Additionally, depending on the competitive conditions in CAPs markets, the CAPs' customers, including SMEs, might be negatively affected when the higher costs are passed on through higher fees for content subscriptions or the quality of service is lowered.

Innovation: The Internet has proven to be a driver of innovation, with access available to CAPs and other end-users, without ISPs acting as gatekeepers by exploiting their termination monopoly on access networks. A contribution may reduce the incentives for CAPs to develop content and applications and may reduce the quality of existing services. Should that lead to less innovation, there would be a welfare loss for the economy and society, and there might be a risk that innovative applications are either developed outside the EU or not provided within the EU.

Open Internet: Given the Declaration's commitment to protecting a neutral and open internet, BEREC would like to stress that respecting the principles of the Open Internet Regulation is a fundamental aspect in this discussion. The introduction of a mandatory contribution could limit the rights and obligations provided by Articles 3(1) and 3(3) of the OIR to protect end-user's choice and to guarantee the continued functioning of the internet ecosystem as an engine of innovation[34] and any measure proposed should comply with the provisions of the OIR.

Sustainability: BEREC cannot assess the possible environmental effects of a financial contribution by CAPs to finance the deployment of networks, without first learning how such a mechanism would work. Nonetheless, consideration should be given to minimising the footprint of devices and digital services and to the deployment of greener networks (for instance relying on energy-efficient technologies and infrastructure sharing).

---

[33] BoR (22) 137 BEREC preliminary assessment of underlying assumptions of payments from large CAPs to ISPs, chapter 5

[34] The Court of Justice of the European Union case law on zero tariff options stresses the principles of equal treatment of traffic and non-discrimination, also related to pricing.