Contribution ID: bef758d8-4e7b-428f-bd55-1126326201cb
Date: 02/03/2021 16:19:59

Public Consultation on the Evaluation and Review of the Broadband Cost Reduction Directive

Fields marked with * are mandatory.

Introduction

The Broadband Cost Reduction Directive (2014/61/EU) aims to facilitate and incentivise the roll-out of high-speed electronic communications networks by lowering the costs of deployment with a set of harmonised measures. The measures focus on access to existing physical infrastructure, coordination of civil works, simplification of administrative procedures and requirements for in-building physical infrastructure for new buildings and major renovations. It also includes provisions to ensure transparency of relevant information through Single Information Points and dispute resolution mechanisms.

The review of the Broadband Cost Reduction Directive is part of the actions announced in the Communication on 'Shaping Europe's Digital Future' (COM (2020)67 final), which stressed that, for digital infrastructure and networks alone, the EU has an investment gap of EUR 65 billion per year. Moreover, adequate investments at EU, national and regional levels are necessary to achieve the EU 2025 connectivity objectives and a Gigabit Society (COM(2016) 587 final) in Europe.

The evidence gathered so far by the Commission, including the report on the implementation of the Broadband Cost Reduction Directive (COM(2018) 492) and the continuous monitoring of its implementation in the Member States, gives rise to the need for the Broadband Cost Reduction Directive to be evaluated and possibly revised. At the same time, the revised instrument should adapt to recent and current technological, market and regulatory developments and help foster a more efficient and fast deployment of more sustainable very high

capacity networks, including fibre and 5G, ensuring alignment with the European Electronic Communications Code and contributing to greening the Information and Communication Technology sector as part of the 'European Green Deal' (COM(2019) 640).

The Commission is carrying out an evaluation of the current measures under the Broadband Cost Reduction Directive and an impact assessment of a possible revised instrument, in a back-to-back process. In this context, this public consultation has two main objectives:

1. collect stakeholders' views and inputs on the implementation of the Directive to support the analysis of the backward-looking evaluation and,
2. collect stakeholders' views and inputs to support forward-looking policy options.

Written feedback provided in other document formats can be uploaded through the button made available at the end of the questionnaire.

About you

* Language of my contribution

- ○ Bulgarian
- ○ Croatian
- ○ Czech
- ○ Danish
- ○ Dutch
- ◉ English
- ○ Estonian
- ○ Finnish
- ○ French
- ○ German
- ○ Greek
- ○ Hungarian
- ○ Irish
- ○ Italian
- ○ Latvian

- Lithuanian
- Maltese
- Polish
- Portuguese
- Romanian
- Slovak
- Slovenian
- Spanish
- Swedish

* I am giving my contribution as
  - Academic/research institution
  - Business association
  - Company/business organisation
  - Consumer organisation
  - EU citizen
  - Environmental organisation
  - Non-EU citizen
  - Non-governmental organisation (NGO)
  - Public authority
  - Trade union
  - Other

* First name

Florian

* Surname

Feillet

* Email (this won't be published)

florian.feillet@gmail.com

* Organisation name

255 character(s) maximum

ETNO (European Telecommunications Network Operators' Association)

* Organisation size

- (●) Micro (1 to 9 employees)
- ( ) Small (10 to 49 employees)
- ( ) Medium (50 to 249 employees)
- ( ) Large (250 or more)

Transparency register number

255 character(s) maximum

Check if your organisation is on the transparency register. It's a voluntary database for organisations seeking to influence EU decision-making.

08957111909-85

* Country of origin

Please add your country of origin, or that of your organisation.

( ) Afghanistan	( ) Djibouti	( ) Libya	( ) Saint Martin
( ) Åland Islands	( ) Dominica	( ) Liechtenstein	( ) Saint Pierre and Miquelon
( ) Albania	( ) Dominican Republic	( ) Lithuania	( ) Saint Vincent and the Grenadines
( ) Algeria	( ) Ecuador	( ) Luxembourg	( ) Samoa
( ) American Samoa	( ) Egypt	( ) Macau	( ) San Marino
( ) Andorra	( ) El Salvador	( ) Madagascar	( ) São Tomé and Príncipe
( ) Angola	( ) Equatorial Guinea	( ) Malawi	( ) Saudi Arabia
( ) Anguilla	( ) Eritrea	( ) Malaysia	( ) Senegal
( ) Antarctica	( ) Estonia	( ) Maldives	( ) Serbia
( ) Antigua and Barbuda	( ) Eswatini	( ) Mali	( ) Seychelles
( ) Argentina	( ) Ethiopia	( ) Malta	( ) Sierra Leone

- Armenia
- Aruba
- Australia
- Austria
- Azerbaijan
- Bahamas
- Bahrain
- Bangladesh
- Barbados
- Belarus
- Belgium
- Belize
- Benin
- Bermuda
- Bhutan
- Bolivia
- Bonaire Saint Eustatius and Saba
- Bosnia and Herzegovina
- Botswana
- Bouvet Island
- Brazil
- British Indian Ocean Territory
- British Virgin Islands
- Falkland Islands
- Faroe Islands
- Fiji
- Finland
- France
- French Guiana
- French Polynesia
- French Southern and Antarctic Lands
- Gabon
- Georgia
- Germany
- Ghana
- Gibraltar
- Greece
- Greenland
- Grenada
- Guadeloupe
- Guam
- Guatemala
- Guernsey
- Guinea
- Guinea-Bissau
- Guyana
- Marshall Islands
- Martinique
- Mauritania
- Mauritius
- Mayotte
- Mexico
- Micronesia
- Moldova
- Monaco
- Mongolia
- Montenegro
- Montserrat
- Morocco
- Mozambique
- Myanmar /Burma
- Namibia
- Nauru
- Nepal
- Netherlands
- New Caledonia
- New Zealand
- Nicaragua
- Niger
- Singapore
- Sint Maarten
- Slovakia
- Slovenia
- Solomon Islands
- Somalia
- South Africa
- South Georgia and the South Sandwich Islands
- South Korea
- South Sudan
- Spain
- Sri Lanka
- Sudan
- Suriname
- Svalbard and Jan Mayen
- Sweden
- Switzerland
- Syria
- Taiwan
- Tajikistan
- Tanzania
- Thailand
- The Gambia

- Brunei
- Bulgaria
- Burkina Faso
- Burundi
- Cambodia
- Cameroon
- Canada
- Cape Verde
- Cayman Islands
- Central African Republic
- Chad
- Chile
- China
- Christmas Island
- Clipperton
- Cocos (Keeling) Islands
- Colombia
- Comoros
- Congo
- Cook Islands
- Costa Rica
- Côte d’Ivoire
- Croatia
- Haiti
- Heard Island and McDonald Islands
- Honduras
- Hong Kong
- Hungary
- Iceland
- India
- Indonesia
- Iran
- Iraq
- Ireland
- Isle of Man
- Israel
- Italy
- Jamaica
- Japan
- Jersey
- Jordan
- Kazakhstan
- Kenya
- Kiribati
- Kosovo
- Kuwait
- Nigeria
- Niue
- Norfolk Island
- Northern Mariana Islands
- North Korea
- North Macedonia
- Norway
- Oman
- Pakistan
- Palau
- Palestine
- Panama
- Papua New Guinea
- Paraguay
- Peru
- Philippines
- Pitcairn Islands
- Poland
- Portugal
- Puerto Rico
- Qatar
- Réunion
- Romania
- Timor-Leste
- Togo
- Tokelau
- Tonga
- Trinidad and Tobago
- Tunisia
- Turkey
- Turkmenistan
- Turks and Caicos Islands
- Tuvalu
- Uganda
- Ukraine
- United Arab Emirates
- United Kingdom
- United States
- United States Minor Outlying Islands
- Uruguay
- US Virgin Islands
- Uzbekistan
- Vanuatu
- Vatican City
- Venezuela
- Vietnam

Cuba	Kyrgyzstan	Russia	Wallis and Futuna
Curaçao	Laos	Rwanda	Western Sahara
Cyprus	Latvia	Saint Barthélemy	Yemen
Czechia	Lebanon	Saint Helena Ascension and Tristan da Cunha	Zambia
Democratic Republic of the Congo	Lesotho	Saint Kitts and Nevis	Zimbabwe
Denmark	Liberia	Saint Lucia	

The Commission will publish all contributions to this public consultation. You can choose whether you would prefer to have your details published or to remain anonymous when your contribution is published. **Fo r the purpose of transparency, the type of respondent (for example, 'business association, 'consumer association', 'EU citizen') country of origin, organisation name and size, and its transparency register number, are always published. Your e-mail address will never be published.** Opt in to select the privacy option that best suits you. Privacy options default based on the type of respondent selected

* Contribution publication privacy settings

The Commission will publish the responses to this public consultation. You can choose whether you would like your details to be made public or to remain anonymous.

Anonymous

Only organisation details are published: The type of respondent that you responded to this consultation as, the name of the organisation on whose behalf you reply as well as its transparency number, its size, its country of origin and your contribution will be published as received. Your name will not be published. Please do not include any personal data in the contribution itself if you want to remain anonymous.

Public

Organisation details and respondent details are published: The type of respondent that you responded to this consultation as, the name of the organisation on whose behalf you reply as well as its transparency number, its size, its country of origin and your contribution will be published. Your name will also be published.

☑ I agree with the personal data protection provisions

* Please specify further the capacity(s) in which you are replying to the questionnaire (several answers may be selected):

- ☑ Operator of electronic communications networks (individual operator or industry association).
- ☐ Operators of physical infrastructure intended to host electronic communications networks (individual operator or industry association).
- ☐ Operator of other types of networks intended to provide a service of production, transport or distribution of gas, electricity (including public lighting), heating and water (including disposal or treatment of waste water and sewage and drainage systems), as well as transport services, including railways, roads, ports and airports (individual operator or industry association).
- ☐ Government (national) Authority/Body
- ☐ Regional Authority/Body
- ☐ Local Authority/Body
- ☐ National regulatory authority for the electronic communications sector.
- ☐ National regulatory authority for other sectors (energy, transport, etc.).
- ☐ EU body or institution
- ☐ Other public body or institution
- ☐ Owner or manager of private property that may be used for the deployment of electronic communications networks (individual or association).
- ☐ Supplier of electronic communications equipment and related services (individual operator or industry association).
- ☐ Building and civil works sector (individual operator or industry association).
- ☐ Stakeholder with a general interest in the deployment of very high capacity networks and services including citizens, social and economic organisations /groups, and nongovernmental bodies.
- ☐ Stakeholder interested in environmental protection, including citizens, social and economic organisations/groups, and nongovernmental bodies.
- ☐ Expert in the subject matter, including academia and think tanks
- ☐ Other

Type of electronic communications networks operator:

- ○ Fixed
- ○ Mobile/Wireless
- ◉ Fixed and Mobile/Wireless

General questions

This section includes some general questions on the benefits of widespread high quality connectivity, the joint deployment of networks, and the role of public authorities to facilitate this deployment.

1. In your opinion, to what extent can widespread high quality connectivity play a role in the response to the COVID-19 crisis and the economic recovery?

ETNO is of the opinion that an ambitious and well-functioning instrument empowered to deliver socio-economic results for a connected Europe is of the utmost importance. The revision of the current Broadband Cost Reduction Directive (BCRD) should reinforce the obligation to implement its measures contributing to the achievement of the 2025 Gigabit Society targets. The introduction of harmonized and streamlined rules is the only effective way to overcome the fragmentation and inefficiency that can be observed at the local and municipal level today.

Therefore, to improve the conditions for network roll-out, we support an ambitious pro-investment legislative initiative which, in addition to the alignment with the EECC and the stronger harmonization of current measures, will provide an enhanced new framework for public authorities and network operators, ensuring a more cost-efficient deployment of networks.

During the COVID-19-crisis, the existing telecommunication infrastructures and services have proven their robustness and efficiency despite an impressive increase of the traffic and usages. They have been used to adapt activities, not possible anymore in their traditional form, such as teleworking, health care, education, local economic activities, etc. They have given access to opportunities in the cultural and entertainment field and to reach audiences during lock down as well as allowed overcoming the limitations of movement and possibilities to gather. The mobile operators provided public authorities with indispensable data insights on e. g. movements and flows to ensure the best possible, life-saving crisis mitigation actions. Many of the changes in ways people work and live, triggered or accelerated by the pandemics, are here to stay.

Consequently, high quality connectivity will continue to increasingly enable digital services; provide more data and better QoS with more devices with important consequences on the overall economy; allow new jobs as well as new ways of working (remotely); new equipment and application production; more efficient production lines; new remote activities in different sectors; enhanced educational models, etc.

2. To what extent is it appropriate to apply measures at European Union level to facilitate and incentivise the roll-out of high-speed electronic communications networks?

Initiatives at European level can guide Member States and stakeholders in a certain direction. In the case of BCRD we can see the extent to which its implementation and efficiency varies between the different countries, leading to the conclusion that for a better and more efficient enforcement, an additional initiative is needed at the European level to reinforce the initial intention of the EC in that domain.

Potentially, a European initiative can also complement some national initiatives, if considered as not sufficient.

3. In your opinion, what benefits could be obtained from the coordination of civil works for the joint deployment of networks (telecommunications, electricity, gas, roads)?

Generally, coordination of civil works can contribute towards at least three objectives: (i) to reduce deployment cost, (ii) to reduce time of deployment and (iii) to mitigate environmental impact.
Whether these positive effects will concretely take place, depends however on the practical and operational implementation of such joint deployment in a particular Member State.

Today, the perception is that as a rule coordination/co-digging is advantageous to all actors involved. Indeed, it is typically to the advantage of citizens that roads and pavements are not dug up several times in a row. For the infrastructure providers involved, coordination/co-digging may however entail many additional burdens e.g. involving coordination activities, reworking of deployment plans and resources, etc. As telecom infrastructure tends to have less demanding trenching standards and faster deployment speeds in relation to the other utilities, it is mostly the latter who enjoy more cost savings when coordinating civil works, while telecom infrastructure operators, may, to the contrary, be confronted with longer delays and additional costs.

4. Besides public funding, what role should public administrations –at different levels- play to facilitate the deployment of electronic communications networks?

Public administration could act on two aspects of VHCN deployment. It is important, first, to digitalize public services in order to foster ECN deployment, and second, to put in place the most efficient rules and practices when public authorization is concerned. The latter is an essential objective of the BCRD. (Local) public authorities are essential facilitators of a smooth and successful widespread roll-out in the EU.

Public administrations should also be included in the scope of the Directive as a subject providing access to their infrastructure suitable to host elements of high-speed electronic communications networks, in principle without requiring any remuneration, except a fair and reasonable covering of effective proportional costs. Such infrastructure entails e.g. public buildings, rooftops, lands, street furniture, including the necessary rights of way. For instance, for mobile deployment public authorities should assist in any possible way in finding the most appropriate locations for mobile sites and assist in the site acquisition process.

Also, local public administrations should increase their awareness of the benefits that the development of 5G technology brings and its positive impacts on the lives of citizens, the management of local public services and the development of businesses and territories. Local authorities should not impose hurdles for the deployment of 5G networks, acknowledging their role as an enabler of digital services to the benefits of citizens. On the demand side, it is important that public administrations improve their own digitalisation and e-Government.

Evaluation of the overall functioning of the Broadband Cost Reduction Directive

This section includes some general questions on the overall evaluation of the functioning of the Broadband Cost Reduction Directive in relation to the key evaluation criteria established in the Commission's Better Regulation Guidelines (i.e. effectiveness, efficiency, coherence, relevance and EU added value).

5. To what extent has the Broadband Cost Reduction Directive been e**ffective to achieve its general objective** of reducing the cost for high-speed electronic communications networks deployment?

- ○ Not effective at all
- ○ Not effective
- ◉ Neutral
- ○ Effective
- ○ Very effective
- ○ No opinion

Please explain your response, including if there are factors other than the implementation of the Directive that have contributed to reducing the cost of high-speed broadband deployment.

The effectiveness of the BCRD has varied greatly between Member States. While in some Member States the BCRD was transposed and enforced in a relatively effective manner, thus facilitating the deployment of ultra-fast broadband networks, in other Member States the BCRD had limited success, specifically in areas of enforcement, dispute resolution, and local permit costs and procedures. To increase the effectiveness of the BCRD and to ultimately incentivize and facilitate the deployment of future networks efficiently, its scope should be widened. Furthermore, consistent, harmonized and efficient procedures for the Member States should be introduced. In this way, it would significantly contribute to achieving Digital Single Market.

Indeed, the implementation of the directive has been effective in some countries for facilitating the deployment of high-speed networks, however even in those cases there are some areas of improvement which need to be addressed in order to further reduce the cost of roll-out and resolve current criticalities.

In general, in a lot of Member States, the implementation of the Directive did not bring the desired added value for the roll out of NGA networks. A lot of successful implementation cases seem moreover to be explained by the fact that some aspects - in particular the ones in relation to cooperation between operators - were already included in national laws and already used in practice prior to the transposition of the Directive.

Despite the heterogeneous implementation of the BCRD across Member States, it is worth to mention, that one factor that has helped to reduce the overall deployment costs has been the presence of widespread pre-existing readily accessible legacy passive physical infrastructure. These have substantially eased the civil works necessary to roll out new technologies. In those countries with readily available and easily accessible physical infrastructure, mainly ducts and poles, roll out costs have decreased, while countries lacking compatible physical infrastructure are characterized by slower and more challenging deployment at a higher

cost. Quite a few the EU member states are confronted with the latter situation.

Our major concerns in relation to roll out of NGA networks relate to the long and unpredictable timing of local planning and permitting procedures and the level of local levies for the involvement of local governments. Although the relevant national authorities have tried to increase harmonization by providing information and best practices, there is still large divergence and little or no improvement in timing and costs of local procedures.
Among practices in relation to the BCRD that have been implemented in national legislation beyond the actual BCRD provisions, it is worth mentioning symmetric access to in-building physical infrastructure and/or actual internal wiring, which can ease and simplify the challenge of connecting customers in the last mile, and thus up to a certain point, speeding-up rollouts in many Member States.

An example of such best practice is in France, article L. 111-5-1 of the French Building and Housing Code (Code de la construction et de l'habitation), that stipulates that all new buildings must be equipped with fiber. The network is therefore financed by the builders and property developers. The fiber network is then put at the disposal of an operator for exploitation; the operator must in turn grant access to all operators seeking access. Article L. 34-8-3 of the French Postal and Electronic Communications Code (Code des postes et des communications électroniques) obliges anyone who has established or exploits a fiber network inside a building to grant access to it.

In Portugal, a national decree-Law that exists prior to the Directive (DL 123/2009) defines the mandatory infrastructures for telecommunications in housing, which are the responsibility of the urban operation developer, namely copper pair wiring, coaxial cable and fiber optic cabling for connection to public electronic communications networks.
The decree-Law also establishes an open, non-discriminatory and transparent access to these in-house infrastructures for telecommunications by electronic communications companies, which is not subject to any payment.

As regards to factors other than the implementation of the Directive, it is worth mentioning how co-investment, network sharing and collaboration between operators have reduced the costs of deployment and promoted investments in new high-speed networks.

6. To what extent has the Broadband Cost Reduction Directive been **effective to achieve its operational objectives**?

	Not effective at all	Not effective	Neutral	Effective	Very effective	No opinion
Increased access to existing physical infrastructure suitable for high-speed broadband roll-out	○	○	◉	○	○	○
Reinforced coordination of civil works	○	◉	○	○	○	○
Reduction of time and cost of permit granting	○	◉	○	○	○	○

Increased access to existing physical infrastructure suitable for high-speed broadband roll-out	○	○	◉	○	○	○

Please explain your answer(s):

Among the goals achieved by the Directive, it could be mentioned that symmetric access to in-building physical infrastructure and wiring and access to physical infrastructures (where readily available) has helped some Member States tackle the last mile problem to access end-customers.
Nevertheless, though there are exceptions, in general the objective to provide straightforward access to suitable infrastructure has not sufficiently been met, as access to the SMP operator's physical infrastructure has often been included among the ex-ante obligations derived from wholesale market analysis, and accordingly, it could not be directly stated that the BCRD has been a success when pushing forward such kind of measures.
Alternative infrastructures suitable for broadband rollout (mainly those belonging to utilities) are often not easily accessible to telecommunications operators due lack of enforcement of those provisions when being implemented nationwide.

In addition, given the evolution of network technologies, in the future revised directive, the definition of "network operator" should be extended to cover 'any entity – private or public - owning or constructing an infrastructure which is technically suitable to host any element of high-speed electronic communications networks, including public buildings and street furniture, such as light poles, street signs, traffic lights, billboards, bus and tramway stops, metro stations, waste plants and water towers (non-exhaustive list)'. Consequently, also the definition of physical infrastructure should be extended.

Furthermore, the effectiveness of the rules requires that authorities at national level issue guidelines and cost principles for the various types of infrastructure, in order to facilitate negotiations.

Permit granting - specifically when dealing with EMF authorizations - has shown an excess of bureaucracy that the Directive has not been able to streamline, and accordingly, there is room for improvement. In general, more simplified and standardized permitting methods would be welcomed.

On top of this, a practical single information point (SIP) providing information on suitable alternatives i.e. non-telecoms infrastructure possible to be used for electronic communications network deployment is among the top demands of our sector. This is an element that was insufficiently fulfilled when implementing the BCRD.

7. As regards the **efficiency** of the Broadband Cost Reduction Directive and its implementing measures, if you compare the costs of implementation and of compliance borne by your organisation with the benefits accrued, how do you rate the cost-benefit ratio at scale 1 to 5 (1=costs significantly exceed benefits, 5= benefits significantly exceed costs)?

- ○ 1
- ○ 2
- ○ 3
- ○ 4

- ○ 5
- ◉ No opinion

Please explain your answer:

The heterogeneity with the implementation of the BCRD provisions across Member States does not allow to draw general conclusions.

8. Could you give an estimate of annual direct costs/savings for your organisation in applying the Broadband Cost Reduction Directive? Please indicate, if possible, the cause of these costs/savings.

NA

9. As regards the **relevance** of the Broadband Cost Reduction Directive, to what extent has this legislation at EU level facilitated and incentivised the roll-out of electronic communications networks through the following means?

	Not relevant at all	Not relevant	Neutral	Relevant	Very relevant	No opinion
Access to existing physical infrastructure and related transparency measures	○	○	◉	○	○	○
Coordination of civil works and related transparency measures	○	◉	○	○	○	○
Permit-granting procedures	○	◉	○	○	○	○
In-building physical infrastructure and related access measures	○	○	○	◉	○	○
Competent bodies and other horizontal provisions	○	○	◉	○	○	○

Please explain your answer(s):

As mentioned before, the heterogeneity in the implementation of the provisions of the Directive, has not helped to provide a general assessment of the relevance at EU level. It could, however, be stated that the improvements achieved have not been as material as intended in 2014.

10. To what extent is the Broadband Cost Reduction Directive **coherent** with other EU policies?, in particular with:

	Not coherent at all	Not coherent	Neutral	Coherent	Very coherent	No opinion
The 2009 electronic communications regulatory framework, in particular its provisions on access (Significant Market Power and non- Significant Market Power), as well as on rights of way and rights to install facilities, dispute resolution, co-location and sharing of network elements and associated facilities.	○	○	◉	○	○	○
The European Electronic Communications Code, in particular its provisions on access (Significant Market Power and non- Significant Market Power), as well as on small-area wireless access points,rights of way and rights to install facilities, dispute resolution, co-location and sharing of network elements and associated facilities.	○	○	◉	○	○	○
Sector-specific EU Law on other network industries, in particular, in the energy and transport sectors.	○	○	◉	○	○	○
Competition policy and state aid	○	○	◉	○	○	○
Other EU policies	○	○	○	○	○	◉

Please explain your answers, and indicate if you have identified any areas for improvement of coherence.

In ETNO's view, the final objective is the same for the different EU initiatives, namely the deployment of VHCN. The EECC has a clear purpose of enabling deployment and rollout of VHCN in order to promote the achievement of the Gigabit Society targets. The BCRD should be updated to clarify that its objective and scope is to promote deployment by lowering the barriers and costs for the deployment of any network capable of contributing to the achievement of the Gigabit society targets.

We believe that a greater effort should be made to align the provisions of the EECC and the BCRD in several areas that are touched upon by both pieces of legislation:

- Some of the EECC provisions on access to civil engineering infrastructure for instance are not aligned with similar obligations on network operators in the BCRD framework. Instead of requiring different and separate databases for SMP operators (as currently recommended under point 17 of NGA Recommendation), the framework should only require one Single Information Point (SIP) (either a database or a platform), as has been set out in the symmetric regulation of the BCRD framework. This SIP covers then the relevant data of both ECN-operators (irrespective of SMP status or not) and non-ECN operators.
- Requirements for geographic mapping of broadband deployment set out in the EECC; any Guidelines developed by BEREC and the requirements in the BCRD should be consistent, and any overlapping between these instruments and requirements must be avoided.

ETNO considers that to a large extent the BCRD and EECC are operating as complementary legislation. Whereas the EECC is providing the rules and means to address competition issues and to some extent symmetric issues between providers of ECN, the BCRD is mainly meant to expand that scope by also providing obligations on other 'network operators' not captured under EECC, which should be defined in a broader way than is currently the case as 'any entity that has physical infrastructure suitable to be used for the deployment of Very High Capacity Electronic Communication Networks'. This does not mean ECN operators are to be excluded from the BCRD framework. Quite to the contrary, for some elements where the EECC remains silent, or certain ECN operators have not access obligations under the EECC, it is important that the BCRD applies to them.

The main point here is the access price. In the SMP regime the access price can be, and is in some cases, cost-oriented. In the BCRD, the price must be in accordance with the principle of 'fair and reasonable terms'. Beside the fact that 'fair and reasonable' does not provide legal certainty, the access prices proposed by some infrastructure owners have not been reasonable, sometimes untransparent and gave rise to dispute resolution procedures (a mechanism that is not always satisfactory either).

It should also be noted that there are no objective reasons for not applying a similar pricing rule for both types of infrastructure owners, or at least to prevent excessive pricing. ETNO believes that the Directive should give additional elements – beyond 'fair and reasonable' – to the supervising authority to apply stricter control. In this respect we see as relevant:

- The notion that fair & reasonable means holding a clear relation to the costs that are proportional to the access or other element of cost reduction that is activated.
- The latter should be combined with a prohibition to apply excessive prices, and an obligation for transparent and non-discriminatory treatment of all beneficiaries.
- The latter should be combined with a prohibition to cross-subsidising its own services to the detriment of beneficiaries. This is for example relevant where an electricity company also deploys CN and could load most of the cost in its monopoly activity of electricity distribution, while charging full prices if someone else shares the cost of deployment (e.g. common civil works). Non-discrimination should thus apply both internally as externally under BCRD for such entities. Cost-related, non-excessive and non-discriminatory

prices also contribute to pursue the principle of non-cross-subsidization between sectors of the economy, thereby preventing significantly different prices from being set for similar services.

In addition to the above, related to this topic of pricing and costs, a condominium should provide free access to the in-building physical infrastructure, as is already the case for the utilities (e.g. electricity, gas, water). The BCRD could take an explicit stance on this point.

11. As regards the **EU added value** of the Broadband Cost Reduction Directive, to w
brought by the Directive beneficial compared to individual national measures?

	Not beneficial at all	Not beneficial	
Ease of doing business across the EU	○	○	
Economies of scale for companies with operations in multiple EU countries	○	○	
Regulatory stability and legal certainty	○	○	
Simple and efficient administrative procedures	○	○	
Other	○	○	

Please explain your answer(s):

Regarding the current benefit of the BCRD for the internal European market, it is at best neutral. While acknowledging some opening in matters of access to physical infrastructure and some improvements in coordination of civil works, the BCRD still has to large extent fallen short in achieving its goal of providing uniform effective rules and in helping to achieve the Digital Single Market. Fragmentation in local processes, procedures and administrative costs creates inefficiencies for operators and hurdles to effective deployment, which have not been effectively addressed by the BCRD.

Ultimately, increased costs of compliance and deployment could result in worse consumer and socioeconomic outcomes. To achieve its goals effectively, the BCRD must prescribe more effective procedures, applicable by Member States and enforced by the Commission. Relevant and efficient national or subnational measures and practices are not shared and distributed elsewhere. That is why the EC initiative of the Union Toolbox for Connectivity is very positive in order to get inspiration from the efficient national measures to be potentially extended all over Europe.

Subject matter and scope

The Broadband Cost Reduction Directive aims to facilitate and incentivise the roll-out of high-speed electronic communications networks by promoting the joint use of existing physical infrastructure and by enabling a more efficient deployment of new physical infrastructure so that such networks can be deployed at lower cost. To this end, the Directive establishes minimum requirements relating to civil works and physical infrastructure, with a view to approximating certain aspects of the laws, regulations and administrative provisions of the Member States in those areas (Article1).
The terms used in this section, in particular ‘network operator’, ‘physical infrastructure’, ‘civil works’, ‘permit’, and ‘high-speed electronic communications network’ are understood as defined in Article 2 of the Broadband Cost Reduction Directive. In addition, the term ‘physical infrastructure’ also includes ‘street furniture such as light poles, street signs, traffic lights, billboards, bus and tramway stops and metro stations’ as set out in Article 57 of the European Electronic Communications Code.

12. In your experience, to what extent do the following aspects influence the timely and efficient deployment of electronic communications networks?

	Not significantly at all	Less significantly	Moderately significantly	Significantly	Very significantly	No opinion
Permit-granting procedures	○	○	○	○	◉	○
Permit-granting fees	○	○	◉	○	○	○
Information about on-going or planned civil works	○	○	○	◉	○	○
Coordination of civil works and other co-investment or joint roll-out mechanisms	○	○	◉	○	○	○
Information about existing physical infrastructures	○	○	○	◉	○	○
Information about other elements and facilities suitable to install network elements	○	○	○	◉	○	○
Access to existing physical infrastructures of electronic communication networks	○	○	○	◉	○	○
Access to existing physical infrastructures of electricity supply networks	○	○	○	◉	○	○
Access to existing physical infrastructures of other supply networks (e.g. water, heat, gas supply, sewerage)	○	○	◉	○	○	○
Access to other elements and facilities suitable to install network elements	○	○	◉	○	○	○
Access to in-building physical infrastructures	○	○	○	◉	○	○
Other	○	○	○	○	○	○

Please explain your answers, including whether the factors negatively or positively affects network deployment, and any other factors that in your opinion may affect the timely and efficient deployment of electronic communications networks.

Main drivers accelerating the deployment of VHCN and reducing deployment costs are the availability of suitable physical infrastructure and effective, easy permit granting procedures.
Accessing to existing SMP infrastructure is widely covered under current regulatory regime. Accessing to alternative infrastructure from Utilities and Public administrations is not so common. The lack of a SIP allowing access to information regarding the suitability and availability of this type of alternative infrastructures increases the timescales for network rollout. It results in operators tending to rely only on their own or other ECN operators' infrastructure.
Some infrastructures are more suitable than others for ECN deployment. Access to other utility infrastructures such as electricity poles or gas ducts can in some instances be difficult, due to the nature of these infrastructures, which may, for example, require stricter security rules. Technical standards in certain countries require an adequate spacing in the underground between utilities making also cooperation difficult. ETNO believes that this does not mean that the scope should be limited, but quite on the contrary that it is difficult to be restrictive in the broadband cost reduction framework where it concerns relevant infrastructures. We refer to our earlier point on the need to revise the definition of network operator and define it in a broader way as 'any entity that has physical infrastructure suitable to be used for the deployment of VHCNs'.
Coordinating of civil works both entails positive and negative factors influencing timely and efficient deployment. First, co-digging may not always result in reduced costs for a project as various utilities and their respective infrastructures have different requirements, deployment cycle times and routings. Secondly, obstructive behavior by competing utilities (e.g. ECN-ECN) on co-digging scenarios (as observed in Denmark in 2019-today), can potentially delay delivery, increase costs of deployment, possibly limit competition and worsen the experience for end-users. The latter e.g. relates to excessive pricing and overbuild based on the in this context obtained information on digging plans. This may also negatively impact the willingness to invest.
Building permit procedures are time-consuming, impacting plannability and the roll-out delays. In our experience it not uncommon that municipalities/local bodies, relying on their regulatory power on urbanization, set cumbersome procedures for authorizing civil works or installation of sites. Differences and different degrees of empowerment between local and between local and national administrations have led to current long-standing processes which delay roll-out and raise coordination issues with operators in view of a coherent roll-out.
As far as "others" are concerned, the access to infrastructure to support mobile deployment like access to public roof tops, is not clearly enough present in the current Directive.
Another topic is the management of right of way. It is of utmost importance to separate the management of the right of way and the activity of operating a network. If not there could be biases, notably when a local authority is deploying networks and is also in charge authorizations. Also the duration of the rights of way is of utmost importance given the long amortization periods for investments.
Here as well, we want to highlight the importance for the cost reduction framework to address the situation of condominium, often managed by a building syndicate. Legislation should contain explicitly a prohibition for building syndicates to refuse access to the building. Such cases exist and create undue local 'pocket' monopolies.
Additionally, the Directive does not encompass the issue of electromagnetic fields emissions (EMF) exposure limits, which is one of the main factors that affect the costs of rolling-out mobile (ultra)broadband networks. Indeed, when limits are much stricter than the ones set by the Recommendation 1999/519/EC, the costs of mobile (U)BB roll-out and operation increase significantly. Lower limits mean that operators are less able to share sites and must build more sites to achieve the same network capacity, with higher costs,

increased energy use and more visual impact. Member States where limits are more restrictive experience delays in 5G deployment, but also greater anxiety from citizens about 5G. Restrictive limits can also affect the quality of service available to consumers and the quality of indoor coverage. Considering that the existence of fragmented and divergent electromagnetic field exposure norms in the EU risks to seriously undermine the roll-out of 5G networks, the Directive should encourage Member States to ensure that national and local EMF exposure limits are based on scientifically grounded recommendations, reflecting the recommendation of WHO/ICNIRP including in the recently updated guidelines.

13. Do any of the aspects referred to in the previous question particularly affect deployment of networks depending on the type of area* or the access technologies**?. If so, please explain how and why?

*Different types of areas where the network deployment is taking place can be identified based on the location of the users or connected objects as follows:

- Urban, suburban, rural areas: areas with different population densities in terms of human users and connected objects (e.g. sensors for IoT applications such as smart agriculture, water resources management, or critical communications)
- Business / industrial parks: areas with business users.
- Communication routes: areas along major terrestrial transport paths such as roads or railways, where e.g.
- Connected Automated Mobility or other logistics applications will be deployed.

**Access technologies can be classified according to the physical media of the access network with which they are associated:

- Fibre networks technologies: Passive/Active Optical Network technologies.
- Hybrid fibre-copper (twisted pair or coaxial) networks technologies: xDSL (G.Fast), DOCSIS technologies.
- Wireless networks with macro cells (range > 2,5 km) technologies: 4G, 5G, WiMax
- Wireless networks with small cells (femtocells, picocells, metrocells or microcells, range < 2,5 km) technologies: mainly 5G.

Type of area:

• Urban area: Priorities for in-building physical infrastructure and wiring and permit granting for civil works.
• Rural area: Priorities for permit granting, access to suitable infrastructure and availability of SIP.
• Business/industrial areas: priority for accessing suitable infrastructure (alternative PIA) and availability of SIP.
• Communication routes: permit granting and access to suitable infrastructure (alternative PIA).

Type of Technology:

• Fiber: priorities for permit granting associated with civil works and easier PIA (mainly Telco Infra)
• Wireless: permit granting for site negotiation as well as SIP availability to use alternative infrastructure (public lamps poste, rooftops …)

14. Do you consider that any of the definitions in the current Directive should be reviewed and/or that additional definitions should be provided for to clarify concepts used in existing provisions? Please explain your response:

In the light of the current status of implementation it is needed to review the Directive in view of widening its scope of application.

Currently, the type of entities that are required under the BCRD or EECC to provide access, by hosting elements of fixed or mobile VHCNs, is experienced as rather unbalanced.

Secondly, we call the EC for an improved, and more consistent scope of the entities to provide access under the BCRD, with a primary focus on enhancing the capabilities for our industry by making new resources available to the electronic communications industry. The current BCRD limits this to “network operators”, essentially focusing on infrastructure utilities. We call upon the Commission to evaluate a broader array of other entities that are in a similar position, i.e. having appropriate (passive physical) infrastructure available, which when opened up could contribute to the broader societal goal of reducing roll-out costs (i.e. any subject owning an infrastructure which is technically suitable to host any element of very high capacity electronic communications networks). To that effect, it is essential to extend ‘physical infrastructure’ also to more generic concept of public infrastructure suitable for deploying fixed or mobile VHCN:
In particular, at least appropriate physical infrastructure (incl. buildings) under the control of public authorities is clearly to be brought in the scope, but also suitable private owned infrastructure shall be included.
Inspiration can also be found in art. 57(4) EECC allowing operators reasonable access to “any physical infrastructure controlled by national, regional or local public authorities”.

Of course, in the context of the BCRD, there is no reason to limit such access to the hosting of small-area wireless access points or access points to a backbone network (cf. art. 57(4)). In order to speed up access to rollout information, but also aligned with the network mapping provisions in the Code, a Single Information Point allowing access to information on infrastructures suitable to be used to rollout VHCN might be settled. This could be also suitable to enable the sector to tackle the Small Cells challenge (e.g. with respect to permits and administrative licenses).

15. Do you consider that the current scope of the Broadband Cost Reduction Directive, – by reference to high-speed networks of above 30 Mbps- remains appropriate, in particular taking into account the 2025 Gigabit strategic connectivity objectives (Towards a European Gigabit Society - COM(2016)587) and the new objective of promoting connectivity and access to, and take-up of very high capacity networks in the European Electronic Communications Code? Please explain your response:

ETNO believes that the Broadband Cost Reduction Directive (BCRD) needs to be reviewed considering current technological, market and regulatory developments. Fostering the implementation of the BCRD so it provides an effective pan-European instrument for network deployment is vital in connecting Europe for a better and digital future.
The main objective beyond the EECC scope is incentivizing the achievement of the Gigabit society targets while at the same time easing the pace for a reduction of the deployment costs. Accordingly, the BCRD should update its original 2014 objectives to focus on VHCN and any network capable of contributing to the

achievement of the Gigabit targets.

To achieve fitness for purpose and future proof BCRD to deliver on European Gigabit society aspirations, we propose the following substantive changes:

- Alignment with the European Electronic Communications Code (EECC) and the objectives of the Gigabit society Communication
- Specific improvements needed to promote the efficient VHCN deployment and the transformation towards the Gigabit society

The scope of the Directive in our understanding has since the beginning been clearly fixed and mobile VHC network, however this legislation would benefit from being more explicit on the mobile.
In this respect, as a consequence, the scope should be further enlarged to (more) explicitly address mobile concerns, in particular regarding the access to all public body owned suitable physical infrastructure to deploy electronic communications networks and particularly such infrastructure suitable to host wireless networks (e.g. roofs of public buildings).

Access and availability of physical infrastructure

Article 3 of the Broadband Cost Reduction Directive requires network operators (not only operators of electronic communications networks, but also operators of other types of networks, such as energy and transport), to meet reasonable requests for access to physical infrastructure for the purposes of deploying high-speed electronic communication networks, under fair and reasonable terms and conditions, including price. Refusals must be grounded on objective, transparent, and proportionate criteria. Where access has been refused or an agreement has not been reached within two months from the day of the request, access seekers can refer the issue to a dispute settlement body, which is empowered to resolve the dispute, including by setting fair and reasonable terms and conditions.
The Directive also requires that all newly constructed and majorly renovated buildings be equipped with physical infrastructure, such as mini-ducts, capable of hosting high-speed networks, and an easily accessible access point in the case of multi-dwelling buildings (Article 8). Providers of public communications networks must have access to the access point and the in-building physical infrastructure under fair and non-discriminatory terms and conditions, if duplication is technically impossible or economically inefficient (Article 9).

16. Please provide an estimation of the percentage that costs linked to physical infrastructure represent in relation to the overall costs of deployment of fixed and mobile/wireless networks for your organisation.

Fixed networks:

- ○ Up to 20%
- ○ 20%-40%
- ○ 40%-60%
- ○ 60%-80%
- ○ More than 80%

Please explain your answer, including where relevant, for cases where new physical infrastructure is built and for cases where existing physical infrastructure is accessed.

Mobile/wireless networks:

- Up to 20%
- 20%-40%
- 40%-60%
- 60%-80%
- More than 80%

Please explain your answer, including where relevant, for cases where new physical infrastructure is built and for cases where existing physical infrastructure is accessed.

17. With respect to access to existing physical infrastructure, to what extent have the following factors led to a more costly or lengthy network deployment?

	Not at all significantly	Less significantly	Moderately significantly	Significantly	Very significantly	No opinion
Lack of availability of suitable physical infrastructure	○	○	○	◉	○	○
Lack of information on existing physical infrastructure	○	○	○	◉	○	○
Difficulty to agree on terms and conditions of access with owner	○	○	○	○	◉	○
Slow/ineffective dispute resolution process	○	○	○	○	◉	○
Other (please specify)	○	○	○	○	○	◉

Please explain your answer, identifying where relevant potential differences between fixed and mobile/wireless networks.

In some Member States, the availability of suitable physical infrastructure access has been vital for operators to achieve feasible costs in ultrafast broadband networks rollouts. The presence in some Member States of widespread pre-existing readily accessible legacy passive physical infrastructure have indeed widely eased network rollout and has reduced costs. Access to SMP infrastructure has been regulated under traditional wholesale obligation derived from market analysis, whereas feasible access to suitable infrastructure from alternative network operators (electricity, water, transport) and public administrations have not been so common.
For “Difficult areas” to deploy fixed networks, such as highly trafficked places or expensively surfaced areas, it may prove to be efficient to be able to deploy within existing physical infrastructure.
As not all existing infrastructure owners are properly covered under the BCRD, this takes away very important sharing opportunities. The presence of alternative infrastructure, especially in the case of certain locations (rural, business parks, …) is determinant to speed up rollout process of ultrafast broadband networks. Access to such kind of infrastructure though theoretically been covered by general provisions of the BCRD has had in a lot of Member States little impact in practice. General refusals to grant such access from network operators or non-transparency and/or differences in pricing terms to access such infrastructure have limited the reach of the BCRD-provisions.

As far as negotiations are concerned, the system should prevent physical infrastructure owners from requesting excessive prices and thus reduce litigations. The application of economic conditions which reflect the costs of providing access to the underlying physical infrastructure is essential to effectively allow the access.

Considering near term 5G deployment and its increased capillarity, granting access to the network operators’ (undertakings) physical infrastructure does not sufficiently guarantee access choices for access seekers. Accordingly, access to any suitable infrastructure owned by private or public infrastructure owners (national, regional and local), regardless of their legal status, must be enforced and properly implemented in view of providing access to their physical infrastructure (e.g. the roofs of public buildings).

Permit granting is widely fragmented in some cases even within the same country while being too long and complicated. Procedures take too long, permits are granted or refused not timely having a direct negative impact on deployments. Frequently, too many institutions are involved into the process and it results in huge bureaucratic burdens with very different requirements and very low predictability which is essential threat for investments. There is a lack of enforcement towards authorities who do not act timely.

18. Do you consider that the obligations to meet reasonable requests for access under fair and reasonable terms and conditions, including pricing (Article 3(2) of the Broadband Cost Reduction Directive), are appropriate to ensure effective and proportionate access to different types of existing physical infrastructure?

	Not at all appropriate	Not appropriate	Neutral	Appropriate	Very appropriate	No opinion
Physical infrastructure owned by operators of electronic communications networks	○	○	◉	○	○	○
Physical infrastructure owned by operators of networks other than electronic communications networks	○	◉	○	○	○	○

Please explain your answer, including, if relevant, how these access obligations should be modified.

Though access to current electronic communications networks have been managed both under regulated and commercial terms among parties, the practical experience when accessing alternative infrastructure (utilities mainly, but public administrations too) has demonstrated unsuccessful. General provisions included in the Directive and the optionality of its implementation have led to extended timescales both for access granting and agreeing pricing schemes.

Beyond the general provision of imposing access to such alternative infrastructure, more prescriptive procedures might be included within the reviewed Directive in order to soften burdens when dealing with operators not willing to provide access to such suitable infrastructure or proposing disproportionate tariffs. The provisions in the Directive in this respect have proven to be inefficient to deal with a future-proof relation among parties.

In recent years, operators in some countries have experienced difficulties on coordinating civil works with competing utilities (see answer to question 12). One way to ease these barriers could be to clarify the cost sharing principles in an updated BCRD. If sector-specific competition rules are not fully clear or effective enough, the BCRD should provide additional elements – beyond 'fair and reasonable' to the supervising authority in view of applying stricter control (i.e. along the lines we argued under question 10 (i.e. proportionate to underlying cost, non-discrimination, prohibition of excessive pricing & cross-subsidy).

19. Has the principle of 'fair and reasonable terms and conditions' for access to physical infrastructure under Article 3 of the Broadband Cost Reduction Directive been applied effectively (with respect to the outcome) and efficiently (with respect to the time taken) by dispute resolution bodies?

Effectively (with respect to the outcome)

- ○ Strongly disagree
- ◉ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly agree

Efficiently (with respect to the time taken)

- ◉ Strongly disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly agree
- ○ No opinion

Please explain your answer, including, if relevant, the benefits and/or problems encountered in the application of this principle.

In general, we observe that dispute resolution mechanisms are not working well at all when dealing with disputes regarding access to infrastructure from other network operators (e.g. Utilities, …).

The interpretation of the term “fair and reasonable” by regulators and conflict resolution authorities have showed great heterogeneity when compared to traditional costing methodologies applied in the sector. Here also we refer to our remarks under question 10 in relation to the fair and reasonable character of pricing (i.e. regulators should base themselves on principles such as proportionate to underlying cost, non-discrimination, prohibition of excessive pricing & cross subsidy). Costs for accessing public infrastructure should be set at the lowest possible level, to cover the additional maintenance costs if any related to the installation of VHCN.

Neither the terms nor the outcome when dealing with conflict resolution processes have revealed proportional or efficient. Current litigation dispute resolution procedures under the BCRD have revealed inefficient; not easing access granting to private sector infrastructure, but instead delaying and making the general rollout process more burdensome.

Also, the current BCRD contains provisions that are left as optional. Again, it should be analysed whether making some or all these optional provisions mandatory in view of a more effective enforcement.

20. Do you consider that the criteria provided in Article 3 of the Broadband Cost Reduction Directive for refusing access to existing physical infrastructure are appropriate?

	Not at all appropriate	Not appropriate	Neutral	Appropriate	Very appropriate	No opinion
Technical suitability	○	○	○	◉	○	○
Availability of space	○	○	○	◉	○	○
Safety and public health concerns	○	○	○	◉	○	○
Integrity and security	○	○	○	◉	○	○
Risk of serious interferences	○	○	○	◉	○	○
Availability of alternative means	◉	○	○	○	○	○

Please explain your answer based on your experience, indicating if other criteria could be relevant.

The reason for refusing access related to the availability of viable alternative could undermine the objectives of the Directive because this could incentivize the deployment of dark fiber in order to refuse access to ducts and could be a source of dispute resolutions. More generally, this gives excessive discretionary power to the physical infrastructure owner to make dissuasive moves against access requests.

E.g. in Portugal, the national decree-Law DL 123/2009 (art. 15) states that access may only be refused where it is technically not feasible; where the use of infrastructures by ECN renders ineffective the main purpose for which they were established; where it hinders the safety of people or property or where there is a no space available. Access may not be refused based on the availability of alternative means.

21. Based on your experience, how relevant have been the current provisions on high-speed-ready in-building physical infrastructure as provided in the Broadband Cost Reduction Directive in facilitating the deployment of electronic communications networks?

- Not at all relevant
- Less relevant
- Moderately relevant
- Very relevant
- Mostly relevant
- No opinion

Please explain your answer, indicating where relevant how the current provisions could be improved.

Symmetric access to in-building wiring is present in at least half of Member States and then revealing as one of the provisions included in the Directive with wider implementation, beyond current BCRD requirements (which is limited to in-building physical infrastructure). Though the terms included in the provision are not very prescriptive and detailed, industry consensus achieved among communications providers to determine terms of such symmetric access, has shown a great understanding among parties and referral of litigations to regulators or other conflict authorities have been quite limited.

In this context it should be brought up that today, internally in the homes, the BCRD is limited to internal passive physical infrastructure – not actual wiring. In relation to this element the Directive should be expanded to include not only the availability of physical infrastructure, but also the internal deployment of actual standardized fiber wiring suitable for VHCN, as an obligation on owners (promotors) of newly built and or drastically renovated buildings, as well as the obligation to subsequently grant access to such wiring on a free of charge basis (in application of the principle of rights of way).

E.g. In Portugal, the DL 123/2009 (that transposes the Directive) states in its Art 29 the mandatory infrastructures for telecommunications in-housing, as being: space for the set-up of piping, cables, equipment and other devices, namely cabinets, inspection chambers and manholes; piping for the set-up of

cables, equipment and other devices; and copper pair, coaxial cable and fiber optic cabling for connection to public electronic communications networks.

22. To what extent would the availability and access to neutral host infrastructures* facilitate the deployment of electronic communications networks?. Please explain your response and whether neutral host infrastructures could particularly affect deployment of networks depending on the type of area (urban / suburban / rural, business parks, communication routes) or access technology (wired / wireless).

* A neutral host infrastructure comprises a single, shared network solution provided on an open access basis to all electronic communications operators.

According to current experiences across Europe, the presence of neutral infrastructures has not revealed as determinant or constituent as major driver for speeding up the process of NGA rollout. Cooperation - including co-investment - models open to any operators ensure a faster deployment of electronic communications networks.

We do not see any impediments or market failure that require intervention for 'neutral host' providers /infrastructure to become more prevalent. For now, the limiting factor has been the lack of a clear business model for a neutral host provider. Whether this will happen in the future should be mere as a response to market developments.

Coordination of civil works

Article 5 of the Directive provides for the right of every network operator (not only operators of electronic communications networks, but also operators of other types of networks, such as energy and transport) to negotiate agreements concerning the coordination of civil works for the purpose of deploying high-speed electronic communications networks. Moreover, it provides for the obligation of every network operator which is fully or partially financed by public means, to meet any reasonable request to co-ordinate civil works on transparent and non-discriminatory terms, provided that such request is submitted in a timely manner, it does not entail additional costs or delays and the network operator can retain control over the coordination. Member States may provide for exemptions from the obligation for works of minor significance, or related to critical infrastructure. Member States may also provide rules on the apportioning of the relevant costs. Where coordination has been refused or an agreement has not been reached within one month from the day of the request, access seekers can refer the issue to a dispute settlement body, which is empowered to resolve the dispute, including by setting fair and non-discriminatory terms, conditions and charges.

23. Please provide an estimation of the percentage that costs linked to physical infrastructure represent in relation to the overall costs of deployment of fixed and mobile/wireless networks for your organisation.

Fixed networks - cost savings

- Up to 10%
-

10%-20%

- 30%-40%
- 40%-50%
- More than 50%

Please explain your answer:

Mobile/wireless networks – cost savings

- Up to 10%
- 10%-20%
- 30%-40%
- 40%-50%
- More than 50%

Please explain your answer:

Civil works often prove more costly than digging alone. In many cases, the public (road/digging) authority also imposes additional requirements which do not stand as a cost saving element. This could e.g. be requirements to reestablish a cycling road to an even better state than originally.
In this context, we also refer to our answer on question 12 where we explained that the coordinating of civil works entails both positive and negative factors influencing timely and efficient deployment.

24. To what extent is it relevant for the deployment of electronic communications networks to coordinate civil works with the following types of networks?

	Not at all relevant	Less relevant	Moderately relevant	Very relevant	Mostly relevant	No opinion
Electronic communications networks	○	○	○	◉	○	○
Gas networks	○	○	◉	○	○	○
Electricity networks (including public lightning)	○	○	○	◉	○	○
Heating networks	○	○	◉	○	○	○
Water networks	○	○	◉	○	○	○
Transport networks (including railways, roads, ports and airports)	○	○	○	◉	○	○
Other	○	○	○	○	○	○

Please explain your answer, identifying differences between fixed and mobile /wireless networks, if relevant.

Among the different study cases for coordination of civil works, maybe the most relevant is the one related with coordination of infrastructure rollout for mobile networks. In the case of mobile, network sharing agreements are quite frequent, and coordination of civil works might have material grounds to be carried out and leading to an improvement of rollout costs.
The BCRD explicitly includes the possibility to coordinate civil works, inter alia, with works for transport networks. This possibility to coordinate civil works becomes all the more important in view of extensive and ambitious coverage obligations imposed in the framework of the recent spectrum auction regarding all major transport paths (roads, railways, waterways) and transport hubs.
The rollout of mobile networks could be accelerated considerably and carried out more cost-efficiently by extending the scope of coordination as well as of infrastructure sharing of the BCRD so far covering public supply networks to properties and passive infrastructures owned by public hands (federal states, municipalities etc.), and thus making available for the construction or installation of mobile masts or antennas, and by providing transparency on their exact location.

Coordination with other network operators different from telecommunications seems to pose feasibility questions as timescale, specific location (routing) or targeted areas could differ significantly. In particular, coordination of works can cause substantial additional delays in network deployment, if one of the actors is not ready to start at the same time and/or takes much longer to finish the works because, his works are more complicated/operationally/technically more cumbersome (e.g. in synergy with water and gas, a telecom operator may be deploying only at 30 m per day, instead of 200 m per day if operated autonomously).

The updated Directive should focus further on avoiding any additional costs, including additional delays for the initially envisaged civil works.

25. Which factors (for example, mismatch of timing –planning and/or execution-, work techniques, interest in an area), have made coordination of civil works for the deployment of electronic communications networks difficult?

Apart from the main consideration that different sectors (Electricity, Communications, gas, transport) might have different targeted areas and then overlapping interest could not always result in a material business case, the main reason underlying the lack of coordination with other network operators is mainly the great differences observed among the timescales and speed rollout planning managed by each sector. Accordingly, for communications operators, it is somehow difficult to handle different speeds in the rollout process in order to potentially obtain some degree of synergies. Further, fierce competition in certain areas may prove grounds for obstructive behavior among coordination between competing utilities (see answer to question 12).

Finally, another obstacle to coordination is the lack of information on planned civil works, given that in quite some Member States the SIP is not (yet) operative for this use, while there is also no prior notice for planned civil works.

26. To what extent has the obligation to meet requests for coordination of civil works financed by public means been appropriate? Please explain your answer,

including whether improvements could be made in regard to the apportioning of costs.

Despite the provision is included within the Directive, in practical terms its application in some Member States reveals that not all public infrastructure owners are obliged to coordinate planned civil works alleging exceptions, and these exceptions do not help achieving the aims of this legislation. As such, all public infrastructure owners might be obliged to proactively pre-notify (through a public announcement, possibly using the SIP) and invite network operators to co-deploy. Obligation to analyze co-deployment possibilities before public civil works begin might be considered by legislators as well. Transparency and timely information sharing are crucial.

27. Do you consider that the obligation referred to in the previous question should be extended to civil works not financed by public means, or that new measures should be taken in regard to coordination of civil works, with a view to avoiding duplication (“dig once” principle), thereby increasing the efficiency of network deployment and reducing its environmental impact?
Please explain your answer:

There is likely no ‘one size fits all’-solution here. In some countries Member States such coordination works well, while in others it is non-existing or entirely left to the private initiative. It is recommended that privately financed civil works would also apply the mechanism of coordination, with this understanding that the earlier mentioned complexity should be duly taken into account in this context.

Transparency measures

Pursuant to Article 4 of the Broadband Cost Reduction Directive, Member States shall ensure that every undertaking providing or authorised to provide public communications networks has the right to access, upon request to any network operator, minimum information concerning the existing physical infrastructure. Member States may also require every public sector body holding, in electronic format and by reason of its tasks, information concerning the physical infrastructure of a network operator, to make it available via the single information point, while Member States shall require such public sector bodies to make it available, upon request.
Pursuant to Article 6 of the Broadband Cost Reduction Directive, Member States shall also require any network operator to make available, upon the specific written request of an undertaking providing or authorised to provide public communications networks, minimum information concerning on-going or planned civil works related to its physical infrastructure for which a permit has been granted, a permit granting procedure is pending or first submission to the competent authorities for permit granting is envisaged in the following six months.

28. In your opinion, to what extent would the availability, through the single information point, of constantly updated information concerning the elements listed in the table be relevant to facilitate network deployment?

	Not relevant at all	Not relevant	Neutral	Relevant	Very relevant	No Opinion

Physical infrastructure from operators of electronic communications networks	○	○	○	◉	○	○
Physical infrastructure from operators of other networks	○	○	○	◉	○	○
Physical infrastructure from public bodies	○	○	○	◉	○	○
Other elements and facilities suitable to install network elements	○	○	○	◉	○	○
Private buildings or facilities other than residential and that are not part of a network (e.g. shopping centres, sports facilities, industrial plants /business facilities)	○	○	○	◉	○	○
Public buildings or facilities that are not part of a network (e.g. administrative buildings, communal centres)	○	○	○	◉	○	○
Civil works in progress or planned by electronic communications operators	○	○	○	◉	○	○
Civil works in progress or planned by other network operators	○	○	○	◉	○	○
Civil works in progress or planned by public authorities, in the short, medium and long term (such as new or renovated industrial areas)	○	○	○	◉	○	○
Acquisition and construction of sites for the deployment of mobile base stations, in progress or planned.	○	○	○	◉	○	○
Other	○	○	○	○	○	○

Please explain your response, and if relevant, whether and how the relevance of having this information depends on the deployment area (urban / suburban / rural, business parks, communication routes) or the access technologies (wired / wireless).

Communications network operators already tend to share with each other that kind of information in the context of State Aid process as well as in the case of SMP operators, obligations related with wholesale access include the provision of such kind of information. On top of that, derived from the provisions of the EECC, network operators will have to provide VHCN performance KPIs as well as forecast for the short term so the implementation of geographical surveys in the coming years will help to consolidate and facilitate the process for accessing such kind of information in the context of electronic communications operators.

Transparency measures could be improved by focusing on the information from alternative operators: in fact, in many cases their information is only available on request and often by other than electronic means. The BCRD should increase efforts onto Member States for the Single Information Point to allow efficient transparent access to the presence of infrastructure of non-telecoms utilities via a digital platform. The provision and availability of such "alternative" information might be crucial in light of the upcoming 5G rollout.

On the other hand, we want to draw the Commission's attention to be cautious on information increased transparency on other operators' plans as well as forthcoming civil works. In fact, large transparency in this regard could lead to anti-competitive behavior.

All suitable infrastructure for fixed and mobile are concerned in all type of areas but a fortiori in areas where the cost of deployment is higher or the business case riskier.
Even if updates are helpful, the associated cost should be considered. An operator interested in rolling out fiber on a given area could require the passive infrastructure owners (ducts, poles) to deliver a map of their networks in the area. The access seeker would then have to check availability, inform the owner and deploy the network. This type of solution would increase efficiency and generate savings.

29. What minimum information concerning physical infrastructures should be available to operators seeking to deploy electronic communications networks, beyond that specified in Article 4(1) of the Broadband Cost Reduction Directive? You can select multiple answers.

- [ ] None
- [x] Georeferenced location and/or route
- [ ] Total and spare capacity to host network elements (e.g. nr. of ducts, m2 of available space)
- [ ] Other

Please explain your answer, including the aspects related to cost efficiency.

The Directive states that the minimum information made available through the SIP is:

- Location and route.
- Type of infrastructure and usage (space availability).
- Point of Contact

Which could be complemented with information like:
geo-referenced location (aligned with some of the provisions included in the geographical survey), availability of other services (electricity, …)

Concerning the availability of minimum information on total and spare capacity to host network elements (this option is also being a part of the draft "Connectivity Toolbox" shortlist of best practices), we have strong

doubts about its proportionality and feasibility of its practical implementation. Even for newly constructed infrastructure, e.g. HDPE pipes hosting fiber, information on capacity may not always be available with enough reliability. For historic infrastructure, the challenges of estimating such capacity good enough to enable third party make a business decision about its rollout may be enormous. As it is done in certain countries, this should preferably be provided on request through the SIP.

30. What would be, in your opinion, the best mechanism for ensuring the most appropriate and efficient access to relevant information regarding existing physical infrastructure and planned civil works?

- (●) A unique information repository, to be populated by network operators and public bodies
- ( ) Federation of existing information repositories, of different network operators and/or public bodies
- ( ) Other

Please explain your answer, and give suggestions for implementation:

A single information point at national level should also cover access to relevant privately held infrastructure that would allow access on demand to minimum information concerning the existing physical infrastructure to any network operator by electronic means. For example, in Denmark, the Registry of Cable Owners ("LER-system") is a digitized system illuminating existing infrastructures across utilities. There is a requirement that any infrastructure owner has information available here. When applying for digging permits, coordinating of civil works happens in the system as well as investigating potential existing infrastructure to use or which may be an 'obstacle' in digging site.

31. In your opinion, how could the different administrative levels in a Member State (national, regional, local) collaborate to maximise transparency as regards information on existing physical infrastructures and planned civil works (for example, providing a common platform, defining standards, collecting and validating information)?

Uniform procedures across sub-national levels and information platforms are a significant part of reducing administrative burdens and thus reducing costs of deployment.

Once the national platform is in place, the potential feeder would have to propose a harmonized form for the information to be provided (location and route, type and current use of the infrastructure). A preliminary inventory of existing information, database, and process should be done at national level, to avoid "reinventing the wheel" and to take lessons from possible good practices.

Permit-granting procedures

Pursuant to Article 7 of the Broadband Cost Reduction Directive, Member States need to ensure that all relevant information on the conditions and procedures for granting civil works permits with a view to deploying electronic communications networks is available from a single information point and that in principle decisions relating to permits have to be made within 4 months. Civil works, as provided in Article 2 (4) of Broadband Cost Reduction Directive 'means every outcome of building or civil engineering works taken as a whole which is sufficient of itself to fulfil an economic or technical function and entails one or more elements of a physical infrastructure'. Concerning the term "permit", the Directive refers to any permit 'concerning the deployment of electronic communications networks or new network elements (…) including building, town planning, environmental and other permits, in order to protect national and Union general interests' (Recital 26).

32. To what extent do the following factors affect the complexity and length of permit-granting procedures to deploy or upgrade electronic communications networks?

	Not at all significantly	Not Significantly	Neutral	Significantly	Very Significantly	No Opinion
Non-respect of the deadline to grant all electronic communications network deployment related permits, including those for rights of way.	○	○	○	○	◉	○
Lack of information concerning the conditions and procedures applicable for granting permits.	○	○	○	◉	○	○
Application for permits cannot be submitted by electronic means	○	○	○	◉	○	○
Multiplicity of permits needed for electronic communications network deployment	○	○	○	○	◉	○
Lack of coordination between the various authorities competent for granting permits	○	○	○	○	◉	○
Lack of explicit rules including on compensation in case requirements for permit-granting procedures are not met, in particular deadlines and refusal conditions	○	○	○	◉	○	○
Other	○	○	○	○	○	○

Please explain your response, in particular, whether any of the above factors is more or less relevant depending on the network deployment area (urban, semi-urban or rural areas; business/industrial parks or communication routes, cross-border regions/areas).

In general, one of the main concerns among ETNO's stakeholders when assessing the effectiveness of the implementation of the BCRD is the heterogeneity observed among and especially within MS about the procedures followed when granting the needed permits to allow the administrative support to carry out the civil works involved in the network rollout. In general, the BCRD has failed in achieving its goal of providing uniform rules and contributing to development of the Digital Single Market.

Variability in local processes, procedures and administrative costs and the lack of coordination between the several authorities in charge of permit granting, creates inefficiencies for operators and hurdles to effective deployment. Permit granting is generally fragmented, even within one country, being too long and complicated.
Procedures take too long certain local authorities do not respect the deadlines set at national level (and compliant with the Directive) and permits are granted or refused not timely and that has a direct negative impact on deployment. Too many institutions are involved into the process and it results huge bureaucratic burden with very different requirements and very low predictability which is essential threat for investments. Lack of enforcement towards authorities who do not act timely and showing discrepancies in how provisions are implemented from national or regional/local point of view.

Ultimately, increased costs of compliance and deployment result in worse consumer and socioeconomic outcomes. To achieve its goals, the BCRD must prescribe more effective and potentially simplified procedures. More clarity and harmonization of these procedures at national level is needed.

In this context it would be a positive evolution if such system could evolve to a more notification-based system instead of permission-based system.

33. To what extent would the following measures streamline the procedures to grant the necessary permits to roll-out electronic communications networks?

	Not significantly at all	Less significantly	Moderately significantly	Significantly	Very Significantly	No Opinion
Allow operators to submit applications by electronic means	○	○	○	◉	○	○
Single entry point (one stop shop), acting as an intermediary, routing permit applications to any competent authority (national, regional or local)	○	○	○	○	◉	○
Integrated permit granting procedure that encompasses all different procedures of each of the competent authorities involved	○	○	○	○	◉	○
Coordination and monitoring by a single body (or set of bodies) of all the involved authorities' permit granting procedures	○	○	○	◉	○	○
Centralisation of the competence for all permits in one authority within the Member State	○	○	○	○	○	◉
Harmonization of permit procedures at Member State level	○	○	○	◉	○	○
Harmonization of permit procedures at EU level	○	◉	○	○	○	○
Other	○	○	○	○	○	○

Please explain your response, and give suggestions for implementation:

ETNO highlights following possible improvements:

- In many cases for the same infrastructure possibly several permit applications need to be introduced, as several administrations might be responsible. For example, when a municipality is responsible for authorizing the works, but a separate application to other administrations is needed for environmental or conservation reasons. The revised BCRD should require that a single application per infrastructure is sufficient. The administration in charge of the area (generally the municipality) should then coordinate the exchange with possible other administrations. An additional improvement would be the issuing of a single permit which covers all the authorisations needed, issued by a coordinated/plenary body.
- "single management point" - a centralized platform where the operator can manage all permits needed for different authorities. Such platform does e.g. exist in Denmark, where all types of building permits can be accessed on a national platform. This allows operators to be more efficient in the presentation of applications, while it allows authorities to respond simpler, more agile and efficient in a centralized way. In any case, there is need for an alignment of timings of all permits. Migration to a notification-based system and extension of the silent (tacit) approval regime also to ancillary permits instead of permission-based system. An alternative way is to have local authorities applying a tacit approval/ deadline of 15 days for administrations to assess the completeness of the application dossier. This would mean that if no request for further documents is issued by the permit granting authority, a decision has to be taken based on the original application, which would lead to increased percentage of applications being treated in the prescribed delay. On a similar thought: extension in more ex-post verification of permits e.g. for ‘smaller’ digging projects (limited area, time span) as exists already in e.g. Denmark.
- Furthermore, the BCRD could introduce that a permit application can be aggregated. This would for instance be the case if for the execution of an entire project phase of the deployment in a municipality several streets, blocks or city quarters need to be authorised. In such cases being able to enter only one general application would greatly contribute to streamlining the process, cut red tape and help to keep the delay for approval.
- Effective update of regional/local regulations to the BCRD provisions by establishing the adaptation of the legal framework within a maximum time period (i.e. 1 year). This situation has often been avoided by local authorities alleging being unaware of the general regulation on the installation of mobile ECNs and requiring approval and installation permission in cases where ex-post control might apply.
- Building permit procedures for mobile radio stations should be aligned with the provisions on permit granting of the BCRD: the process of obtaining a building permit can be up to 9 months, impacting plannability and roll-out delays. Timescales could be reduced by extending the provisions on permit granting of the BCRD to the specific permit procedures applying to mobile radio stations. Besides building law, this also comprises environmental/nature/landscape protection or monument protection law requirements.
- Co-usage rights of MNOs should be extended to publicly owned real estate and passive infrastructure: the rollout of mobile networks could be accelerated considerably and carried out more cost-efficiently by extending the existing co-usage rights of the BCRD so far covering public supply networks to publicly owned properties and passive infrastructures (national, regional, local), making it available for the construction of mobile masts/antennas. This requires transparency on their location.
- Harmonization of the rules regarding the deployment of mobile networks. Today the processes and documentation requirements are different between areas Homogeneous internal processes for the operators, would make this more effective and efficient.
- (Ad-hoc) training on BCRD provisions for local/regional technicians and public administrations that are involved in the application of this regulation (architects, building engineers, urban planning lawyers, etc.). Guidance can also be provided by NRA’s on the nature and importance of VHCN, providing a broader perspective and societal goal to this process.
- Effective enforcement and respect of the deadlines set at national level by/for local administrations,

which should include compensation in case of non-respect (e.g. refund of related costs in case of delays);

Finally, the procedures should be optimized in terms of paperwork and timing.

Cost/benefit analysis should be done for the suggestions. For example, the centralization of all permits in one Member States could be considered as cumbersome and not providing so much advantage.

34. Would simplified permit procedures (such as no need to obtain a permit or permit exemption, tacit approval in the event that a certain deadline is exceeded, prior-communication accompanied by ex-post verifications only, etc) be appropriate to facilitate certain types of network deployment (e.g. technological upgrades, low impact installations, etc)?

Please explain your response, including which simplified procedures would be relevant for which type of network deployments:

Yes, simplified permit procedures would be appropriate. It is one of the major issues in the BCRD. The timing of this procedure is also a concern and the full process should not take more than 2 months.
The EC could propose a procedure or some guidelines to be applied in all the MS.
Introducing a harmonized light licensing regime for antenna sites would reduce deployment costs and the response time for deployment permits.

Some Member States similarly have permit exemption regimes in place for simple site upgrades. For instance, the Danish Building Act (“BR 18”) exempts several categories of site upgrades for additional permitting if the designated upgrade does not change to static construction as well as does not change visual outlook significantly. This is indeed very helpful as mobile networks are continuously upgraded.

Also, the current rules in the BCRD need to be strengthened and further streamlined to ensure its goals are achieved. The BCRD should provide that Member States shall seek to ensure that any new rules on permitting are consistent.

A universal regime where consents are “deemed” to be given for relevant access to buildings, rooftops and infrastructure unless there is objection from relevant interested parties is an efficient and tested model for cost-effective and timely delivery of new broadband networks. It effectively removes the need for complex and lengthy waiting periods and variable permit procedures, while requiring a notice period within which objections may be submitted.

Other ideas we suggest to add:
- to work with more large-scale permit granting at neighborhood/city level to cut red tape. Instead of individual prior permits per work/street level, need for more “one stop shop” permits for a comprehensive fiberhood plan, covering larger volumes in a one-stop shop procedure

- to have local, municipal, regional authorities to conclude global agreements with VHCN infrastructure operators for smoother handling of administrative requirements in the form of “Fiber Friendly City Charters “. In this context, also to ask for more widespread extrapolation of positive learnings in a particular local level to other local levels,

- de minimis / exemption regime / tacit approval for (standardized) network roll out works to cut

formalistic red tape

- creation of a “competence center” overarching the competent local authorities.
  - This structure would not observe the material competence of permit granting (which stays with the local level), but would harmonize, streamline, standardize and automate, the processes and flow-through of permit granting. This would thus be some kind of overseeing expertise center.
  - Structure is created at ‘state level’ (i.e. the level in the MS that has the legislative and administrative overview over the local authorities, which can be national/federal or federated/regional level, depending on the state constitutional structure

- Take further measures to cut red tape by allowing the jointly submission of
  - multiple permits in a one submission
  - the requests for permits for all works that are part of a joint trench, where only one of the operator /utilities has to handle this

35. In your view, are there specific obstacles to the joint roll-out of electronic communications networks and to different forms of network sharing (e.g. sharing of passive or active elements of a network)?.

If your answer is yes, what are these obstacles and should there be any measures taken to further facilitate these forms of cooperation?

In ETNO’s view this is not a BCRD matter. It is however worth noting that network sharing agreements are proving instrumental to support the sustainability of mobile network investment. The deployment of new mobile high-speed networks and particularly 5G technology, is designed not only to increase network performance, but also to deliver increased energy efficiency. This comes both from 5G technology’s higher operational efficiency and architecture that makes sharing of infrastructures more important to reduce costs, while ensuring retail competition and a fair return for those that have invested in physical network infrastructure (fiber backhaul). Voluntary network sharing agreements offer significant opportunities to reduce costs, they allow for a more efficient network deployment and they also improve coverage and quality. It should be supported from a policy point of view; however, it is not in the BCRD scope.

Environmental impact of electronic communications networks

In its Communication on a European Green Deal (A European Green Deal- COM(2019) 640), the European Commission has pointed out that digital technologies are a critical enabler for attaining its sustainability goals in many different sectors. At the same time, the digital sector itself needs to put sustainability at its heart and undergo its own green transformation, including in particular by reducing its greenhouse gas emissions to address climate change. To support this effort, the Commission is assessing the need for more stringent sustainability measures when deploying and operating electronic communications networks.

36. Do you consider that the deployment and/or operation of electronic communications networks can have a negative impact on the environment, in particular due to emissions of CO2 and other greenhouse gases?

	Not at all significant	Less significant	Moderately significant	Significant	Very significant	No opinion
Deployment of fixed networks	○	◉	○	○	○	○
Operation of fixed networks	○	◉	○	○	○	○
Deployment of mobile/wireless networks	○	◉	○	○	○	○
Operation of mobile/wireless networks	○	◉	○	○	○	○

Please explain your answer for each of the above categories:

ETNO welcomes the content and the ambition of the European Commission's strategy to advance the EU Green Deal.
The ICT sector has been already performing all the relevant actions in this respect, using a high rate of renewable electricity and deploying the circular economy for its equipment. It has heavily invested to make progresses and it has already reduced its own environmental footprint with efforts to reduce its emissions across Scope 1, 2 and 3 with the objective to become climate neutral.
The operation and deployment of networks consumes energy and resources. And with all the proper considerations due to national circumstances and specificities, normally network deployment does so more than network operation. Additionally, different lifespan between fixed and mobile network technology should be properly taken into account.
However, a narrow focus on direct emission in deployment and consumption during operation would be misleading. The starting point for assessing networks' impact on the environment should be on networks' primary positive role for the environment, which includes cutting edge as well as legacy networks with lower energy efficiency.
There is a common understanding among decision makers that climate targets will not be achieved without the crucial role of ICT as enablers.
Digital solutions are a critical pre-requisite for achieving the EU Green Deal's sustainability goals. A report produced by the GSMA and the Carbon Trust calculated that the use of mobile technology powered global emissions reductions of around 2,135 million tons CO2e in 2018 – almost ten times greater than the global carbon footprint of the mobile industry itself. Moreover, according to the International Telecommunication Union (ITU) SMART 2020 report done by the GESI and published as a contribution of one the focus groups, the scale of the enabling effect, across all ICT, was equivalent to 15% of all global emissions by the end of 2020.
Services based on the Internet of Things (IoT), Cloud or Big Data require a strong digital infrastructure and enable more efficient use of resources across many sectors such as: manufacturing, agriculture, mobility, transport/logistics, energy, healthcare, education, public administration. Those sectors, through uptake of digital infrastructure and digital services, have the opportunity to become more productive, more modern and more service-oriented, while dramatically reducing their carbon footprint (Deloitte for GeSI, Digital with Purpose, 2019).
The exact calculation of the enabling effect varies depending on the study, e.g. how strongly to consider rebound effects. Still, there is a broad agreement that the role of digital as enabler is positive and multiple times higher than the digital sector's own footprint. It would be misleading to consider the role of networks as overall negative.
Telecommunication companies have a strong commercial incentive to ensure efficient deployments and operations. Accordingly, they invested and continue to invest heavily in the build-out and upgrade of energy efficient and high-speed network infrastructure. In 2019, ETNO companies deployed 70.9% of the total network investment in Europe, €36.6bn, fixed and mobile. This includes to integrate energy efficiency objectives in business activities (e.g. site and platform optimization, retirement of legacy hardware, early efficiency modelling). Depending on the individual network and business, operators choose the most suitable measures. The concretely applied measures can therefore vary considerably. As a result of operators' efforts, the energy consumption of networks was kept relatively stable throughout the last years despite the strong increase of traffic. Cisco estimates that about 80% of traffic volumes results from video streaming services and this share further grows (Cisco Newsroom, 2021).
Telecom companies are so called "mere conduits" of the traffic, with very little ability to directly reduce the traffic volume resulting from third parties' service usage. This limitation is due to both practical and legal constraints (e.g. Open Internet Regulation). Any attempt to effectively reduce traffic volumes in networks – and the resulting energy consumption – needs to be designed by looking also at the broader value chain, considering services provided over the internet as well as consumers' internet consumption habits. Also, with

regard to scope 3 emissions, a broader view on the value chain is required.
From this more exhaustive perspective on networks as enablers, decision-makers should support network deployment for the sake of climate protection. This objective correlates with the original objective of the BRCD – the lowering of deployment costs. It would be misleading and ineffective to narrow the support down to a subset of networks, e.g. which are considered as particularly energy efficient.

37. What are the factors that determine the environmental impact resulting from the deployment of electronic communications networks?

	No contribution at all	No significant contribution	Neutral	Some contribution	Significant contribution	No opinion
Deployment techniques, e.g. type of trenching	○	○	○	○	◉	○
Type of networks, e.g. fixed or wireless/mobile	○	○	◉	○	○	○
Manufacturing of the equipment, materials used and logistics	○	○	○	◉	○	○
Other (please specify)	○	○	○	○	◉	○

Please explain your answer(s):

General remarks
All the listed factors can have an impact on the energy and material efficiency of deployment. Accordingly, network operators take inter alia these factors already into account when constantly improving their efficiency (see #36 on operators' ongoing efforts). In most areas, we do not see significant potential to further increase efficiency through the BCRD.

Deployment
Concerning deployment techniques, we have identified regulatory hurdles that impede more efficient deployment processes. The updated BCRD should remove these regulatory hurdles and provide operators more flexibility to improve efficiency. This refers to hurdles concerning e.g. the sharing of mobile and fixed infrastructure, too restrictive EMF exposure limits, the use of micro-trenching and the deployment of fixed lines above the ground.

It is worth noticing that the climate impact is mostly related to what kind of fuel that is used in the process than any specific technique applied. Fossil free electricity and the usage of bio diesel instead of fossil based diesel in construction machines is just two examples of how to reduce the actual impact in deployment. Increase the availability of fossil free alternatives will result in a drastic emission reduction.

Manufacturing of the equipment, materials used and logistics
We believe the production and the use stages are somewhat contributors to carbon footprint. The production includes manufacturing of network equipment and transport of goods (also from abroad), as well as electric production and diesel/gasoline burnt in building machines.

Other
The term "deployment" should not be limited to the roll-out of new network generations but should also cover the upgrades in legacy networks. These efforts significantly contribute to operators' energy savings (e.g. migration from PSTN to IP, retirement of no longer needed hardware).

Conditions that drive the need of deployments must be taken into account. Traffic volumes drive the deployment and related consumption of energy and resources. The more traffic, the more network capacity in term of hardware performance and mobile installments is required. Telecoms have hardly any possibilities to reduce the traffic volumes (see response to #36).

38. What are the factors that most contribute to greenhouse gas emissions resulting from the operation of electronic communications networks (without considering end-user equipment)?

	No contribution at all	No significant contribution	Neutral	Some contribution	Significant contribution	No opinion
Energy efficiency (e.g. energy consumed per unit of service delivered)	○	○	○	◉	○	○
Carbon intensity of energy sources used for the generation of power supplying the network	○	○	○	◉	○	○
Other (please specify)	○	○	○	◉	○	○

Please explain your answer(s):

General remarks
We have not identified regulatory hurdles for the efficient operation of networks that should be addressed through the BCRD. Network operators apply a broad range of measures to ensure efficiency of their operations. Accordingly, we do not see a need or justification for regulation.

Energy efficiency (e.g. energy consumed per unit of service delivered)
The measurement of energy efficiency is an important indicator of networks' efficiency. Most of networks' consumed energy is electricity.

For commercial reasons, operators have strong incentives to ensure high energy efficiency of operations and apply many different measures. Beyond the examples provided in our response to question #36, operators will also increasingly use big data and AI applications to optimize sustainability. The data transmitted by smart meters is used for dynamic energy efficiency measures, such as the application of standby mode in 5G networks. Additionally, ETNO members are constantly improving the energy efficiency of telco sites, which is the data-processing hardware primarily used for ensuring network performance. Through innovative solutions such as the "free cooling" technology (relying on the ambient air) or the "liquid cooling", operators have significantly improved cooling systems.

The assessment of energy efficiency should be based on a transparent and robust calculation model. Currently, there is currently no standard model to assess networks' energy efficiency. Accordingly, available figures vary significantly. A robust model should be technology agnostic, consider the actual consumed bandwidths and take a wholistic perspective that includes the backbone as well as relevant hardware at the customer's premise. Telco sites needs to be clearly distinguished from data centres. While telco sites consist of data-processing hardware that ensures network performance, data centres are primary used to deliver services such as cloud to customers.

Carbon intensity of energy sources used for the generation of power supplying the network
The indication of carbon intensity should complement the KPI "energy efficiency". This allows to acknowledge important measures such as the purchase of renewables. ETNO members significantly increased the share of energy produced from renewables. This reflects positively on the green performance of the sector, which in 2019 reduced its overall emissions by 8.5% with respect to the previous year (Source: https://etno.eu/library/reports/90-state-of-digi- 2020.html). Already today, there are several telecom operators that source 100% of their energy from renewables, self-developing plans for renewable sources, or testing new sources for self-production at high-consumption sites.

Other
The proposed exclusion of crucial hardware from the assessment would miss out crucial and integral elements of the connectivity service.
Firstly, the hardware that is needed to use the connectivity service requires multiple times more energy that the lean network performance. As reported in the study by Malmodin, Jens & Lundén, Dag. (2018) ''The Energy and Carbon Footprint of the Global ICT and E&M Sectors 2010–2015'', user devices such as phones, tablets, computers and modems account for the largest share of the total carbon footprint of ICT in 2015. About half of the emissions are related to usage and the other half to the rest of the life cycle. Desktop PC usage and smartphone manufacturing represent the most substantial impact, followed by customer premises equipment (CPE), laptops and monitors.
Accordingly, the efficiency of hardware is far more relevant for the environment than the choice of the connectivity service.
Secondly, the router is essential for using the network and is in case of some technologies even part of the

service (network termination point). The kind of router and its energy consumption varies depending on the network technology. Therefore, network and routers need to be considered in conjunction.
From a more inclusive perspective, also those conditions that drive energy consumption of operations need to be taken into account. The energy consumption of operations is driven by the deployed hardware. The deployment of hardware is largely driven by the volume of traffic.

Additionally, it would however be beneficial if the regulatory boundaries of reuse of excess heat would be limited or removed. Today' there's a challenge for different actors to utilize for instance excess heat and chill without the burden of additional tax / VAT for the services provided. This hampers the potential of energy reuse in an efficient way. Instead, excess heat is just actively chilled with an additional cost.

39. What could be appropriate criteria to qualify network deployment projects as ‘environmentally sustainable’, already before such deployments have started?

	Not at all appropriate	Not appropriate	Neutral	Appropriate	Very appropriate	No opinion
Medium used (for fixed), e.g. fibre, copper, cable	○	○	◉	○	○	○
Technology generation used (for mobile), e.g. 4G/5G	○	○	◉	○	○	○
Energy efficiency of network equipment used	◉	○	○	○	○	○
Passively shared network	◉	○	○	○	○	○
Actively shared network	◉	○	○	○	○	○
Network deployed with coordinated civil works with other networks (electronic communications, electricity, gas, etc.)	◉	○	○	○	○	○
Other (please specify)	○	○	○	○	○	◉

Please explain your answer(s):

Networks are crucial enablers, and this enabling effect is not limited to some specific networks (see response to #36). Besides this, operators have already strong commercial incentives to ensure efficient deployments and operations. Against this background, we do not see an advantage in defining "environmentally sustainable" networks and linking this to exclusive benefits.
Rather, the BCRD should support efficiency of any network by removing identified regulatory hurdles. This would provide operators the means to further improve efficiency.

Medium used (for fixed) and Technology generation used (for mobile)
If the Commission nevertheless intends to define environmentally sustainable networks and links this to specific benefits, this category needs to be broad enough to ensure legal certainty and flexibility for operators. This is best reflected by the criteria "medium" and "technology". Once an operator decides to roll-out a new network generation such as FTTH and 5G, this would be labelled as environmentally sustainable. Operators should then be free to choose the best measures to ensure efficient deployments and operations. In practice most of the current roll-out is FTTH and 5G. While calculations widely vary, there is agreement that these technologies are most efficient particularly for high data rates. A recent study (main findings here https://www.nokia.com/about-us/news/releases/2020/12/02/nokia-confirms-5g-as-90-percent-more-energy-efficient/#:~:text=Espoo%2C%20Finland%20%E2%80%93%20A%20new%20study,(RAN)%20in%20Telef%C3%B3nica's%20network) undertaken by Telefónica, NOKIA and other two vendors shows that 5G technology is up to 90% more efficient than 4G in terms of power consumption per unit of traffic (W / Mbps). This is inter alia driven by Power Savings Features which allows to dynamically reduce consumption of 5G networks, e.g. during lower traffic hours.

Energy efficiency of network equipment used, network deployed with coordinated civil works, network sharing
Decision-makers should refrain from introducing more detailed criteria for defining environmentally sustainable networks, such as based on the used equipment or whether networks is shared. Firstly, individual networks considerably vary depending on factors such as the specific hardware and software, as well as the network's topology. A one-size-fits-all approach does not match with this heterogeneity.
Secondly, deciding upfront on each detail of the deployment and operational detail would result in an overly bureaucratic process. Many decisions such as around deployment techniques, the procurement of hardware or infrastructure sharing will only be taken after the deployment process has started.

40. Which type of positive incentives can foster the deployment of electronic communications networks which have a reduced environmental footprint?

	No incentive	Weak incentive	Moderate incentive	Considerable incentive	Strong incentive
Expedited administrative treatment of all permits related to the deployment of the specific network	○	◉	○	○	○
Permit requirements limited to prior communication only	○	◉	○	○	○
Reduction or abolishment of permit fees related to the deployment of the specific network	○	◉	○	○	○

Reduction or abolishment of access fees related to the deployment of the specific network for physical infrastructure that is owned or controlled by public bodies/authorities	○	◉	○	○	○
Other (please specify)	○	○	○	◉	○

Please explain your answer(s):

The establishment of regulatory incentives for networks with a “reduced environmental footprint” would miss the fact that (1) operators already have strong commercial incentives to deploy and operate energy efficient networks, and (2) also networks with no reduced environment footprint are strong enablers and have overall a clearly positive environmental footprint (see our response to #36). We therefore support the removal of barriers for any network. The above listed “benefits” describe areas where reforms are necessary beyond networks with reduced environmental footprint.

If the updated BCRD will nevertheless introduce benefits listed to environmentally sustainable networks, it is key that (a) this is based on a sufficiently broad category of environmentally sustainable networks (see response to #39) and (b) that these positive incentives do not turn into obligations or constraints for any network. Some examples of such “negative incentives” can be found in the draft “Connectivity Toolbox”: mandatory multi-operator sites and especially stricter regulation when installing networks in the forest, protected areas and on cultural heritage sites.

Other
Beyond the above listed areas of actions, decision-makers should consider our proposed adjustments as described in the other chapters and remove barriers for more efficient deployment processes. The latter includes to facilitate the use of micro-trenching, the deployment of fixed lines above the ground, and the sharing of mobile and fixed infrastructure. All these measures can – depending on the individual case - increase significantly a network’s efficiency.

5G technology and architecture makes sharing of infrastructures particularly important to reduce costs. This also results in more energy and resource efficient deployments, improved coverage and quality. At the same time, it is key to ensure retail competition and a fair return for those that have invested in physical network infrastructure (fibre backhaul). Network sharing should therefore be based on voluntary network sharing agreements. The BCRD should support voluntary network sharing agreements - for the sake of sustainability and to help accelerate network deployment investment.

On top, the BCRD should include an explicit acknowledgement of networks’ crucial role as enabler that saves energy in other sectors. This could be a strong signal to investors that seek for green investments.

Governance and enforcement: Competent bodies and other horizontal provisions (penalties, dispute resolution)

According to Articles 10 and 11 of the Broadband Cost Reduction Directive, Member States need to appoint one or more bodies to provide information on physical infrastructure, civil works and permits and one or more independent bodies to resolve disputes between network operators regarding access to infrastructure, access to information and requests to coordinate civil works. Moreover, Member States shall

lay down appropriate, effective, proportionate and dissuasive penalties applicable to infringements of national measures adopted pursuant to the Broadband Cost Reduction Directive.

41. In your opinion, to what extent is the dispute settlement system provided in the Broadband Cost Reduction Directive appropriate, concerning:

	Not appropriate at all	Not appropriate	Neutral	Appropriate	Very appropriate	No opinion
Access to existing physical infrastructure (Art. 3)	○	◉	○	○	○	○
Transparency concerning physical infrastructure (Art. 4)	○	◉	○	○	○	○
Coordination of civil works (Art. 5)	○	○	◉	○	○	○
Transparency concerning planned civil works (Art. 6)	○	○	◉	○	○	○
Access to in-building physical infrastructure (Art. 9)	○	○	○	◉	○	○

Please explain your answer(s):

Current litigation dispute resolution procedures under the BCRD have revealed inefficient; not easing access granting to private sector infrastructure, but instead delaying and making the general rollout process more burdensome. It should be analyzed how replacing the current dispute settlement procedures by more concrete enforcement competencies for the relevant sector regulators (including more strict and shorter procedures) would contribute to more effective and immediate enforceability.
Requiring Member States to enforce the access rights more quickly and concretely under the BCRD will be key.
With regards to coordination of civil works (especially concerning competing utilities), issues as highlighted in the answer to question 12 could be eased by more stringent dispute settlement systems, e.g. on cost-sharing arrangements.

Also, the current BCRD contains provisions that are left as optional. Again, it should be analyzed whether making some or all these optional provisions mandatory in view of a more effective enforcement.

42. In case you consider it not appropriate at all or not appropriate, what are the main reasons?

	Not relevant at all	Not relevant	Neutral	Relevant	Very Relevant	No opinion
Non-compliance with Broadband Cost Reduction Directive deadlines to solve a dispute resolution process	○	○	○	○	◉	○
Too long dispute resolution process	○	○	○	○	◉	○
Lack of rules on apportioning the cost (in case of coordination of civil works, Art. 5)	○	○	○	○	◉	○
Lack of clarity on “fair and reasonable terms’ concept (Art. 3 and 5)	○	○	○	○	◉	○
The need for payment of fees when referring a case to the Dispute Settlement Body	○	○	◉	○	○	○
Other reasons	○	○	○	○	○	◉

Please explain your answer(s):

It has been noted that dispute resolution has been largely underused and ineffective to enforce the Directive. Where used, the resolution has taken a long time and thus has delayed the deployment of ultra-fast broadband networks. As such it does not provide an effective method for better, faster and more efficient

deployment. The revised BCRD should introduce a mechanism for ensuring that disputes are resolved within the deadlines provided for. In any case, the use of dispute resolution should be relegated to the last resort option for the operators.

To facilitate the negotiation of economic conditions without the need to resort to dispute resolution, the revised BCRD should require NRAs to adopt guidelines clarifying the criteria for the definition of prices for different categories of infrastructures. This would prevent physical infrastructure owners from requesting excessive prices and reduce litigations. The application economic conditions which reflect the costs of the underlying physical infrastructure is essential to effectively allow the access. Because there is no issue in respect to downstream competition between the infrastructure owner and the VHCN investor, the additional cost for opening the infrastructure could be considered as a reference for the access price.

43. In your view, how relevant are the following measures to guarantee a satisfactory dispute resolution process:

	Not relevant at all	Not relevant	Neutral	Relevant	Very relevant	No opinion
Imposing penalties on the dispute resolution body if resolution is not issued with the deadline	○	○	○	○	◉	○
Setting rules on apportioning the cost (in case of coordination of civil works, Art. 5)	○	○	○	◉	○	○
Guaranteeing a free process.	○	○	◉	○	○	○
Other	○	○	○	○	○	○

Please explain your answer(s):

Setting rules on apportioning the cost (in case of coordination of civil works) in the dispute settlement process is one way forward. However, we prefer and recommend that the future Directive provides for more elaborated and clear-cut principles on fair and reasonable cost sharing. Here also we refer to our remarks under question 10 in relation to the fair and reasonable character of pricing (i.e. regulators should base themselves on principles such as proportionate to underlying cost, non-discrimination, prohibition of excessive pricing & cross subsidy).

44. In your view, how useful are the national rules on penalties applicable to infringement of the obligations provided in the Broadband Cost Reduction Directive

- ○ Not useful at all
- ◉ Not useful
- ○ Neutral
- ○ useful

- ○ Very useful
- ○ No opinion

45. In case you reply that the national penalty mechanism is not useful at all or not useful, the reasons are:

	Yes	No	No opinion
The penalty mechanism has not been applied	◉	○	○
The regulation providing infringements is broad and general	○	○	◉
The penalties imposed are not dissuasive enough	○	○	◉
Other	○	○	○

Please explain your answer(s):

We refer to our other answers for context.

Legal instrument

46. In your opinion, how appropriate has been the choice of a Directive as a legal instrument to regulate the measures to reduce the cost of deploying electronic communications networks?

- ○ Not appropriate at all
- ○ Not appropriate
- ◉ Neutral
- ○ Appropriate
- ○ Very appropriate
- ○ No opinion

Please explain your answer:

Given the heterogeneity across Member States, it is fair to conclude that a material part of the provisions in the Directive have lacked enforceability and accordingly a clear need for improvements exists.
It should be considered that in many Member States, there exist good industry solutions that should be maintained. Improving harmonization could work, but stringent regulation may not necessarily be the best way forward, as there is a risk of losing on existing good practices and well-working processes and national legal frameworks. However, a rapid implementation of the upgraded version of the provisions would be welcome due to the current importance of rapid VHCN deployment.

Alternative ways to go forward (instead of changing legal instrument) are possible (imaginable), e.g.:
o The current BCRD is not designed to ensure fast and efficient processes with a strong enforceability where Member States lack to properly transpose and implement. The directive could be reinforced in this respect.

o The current BCRD contains several provisions that are left as optional provisions for the Member States (“may”). Again, it should be analysed whether making some or all of these optional provisions mandatory (“shall”) would contribute to a more effective and straight-forward enforcement
o In addition, current litigation dispute resolution procedures under the BCRD have revealed inefficient; not easing access granting to private sector infrastructure, but instead delaying and making the general rollout process more burdensome. It should be analysed how replacing the current dispute settlement procedures by more concrete enforcement competencies for the relevant sector regulators (including more strict and shorter procedures) would contribute to more effective and immediate enforceability.
o There should also be a mechanism to ensure compliance with the rules of the provision, which could be a form of a penalty regime, properly incentivizing Member States to ensure a proper implementation (e.g. consequences when delays to deliver permits are not respected).

47. In your opinion, what would be the most appropriate legal instrument when reviewing the Broadband Cost Reduction Directive?

	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	No opinion
Directive with minimum harmonization (similar to the Broadband Cost Reduction Directive)	○	○	○	◉	○	○
Directive with maximum harmonization	○	◉	○	○	○	○
Regulation	○	◉	○	○	○	○
Other instrument	○	○	○	○	○	◉

Please explain your answer(s):

Though we agree with keeping the current legislative approach, there are several remarks and observations to be raised in this respect:
o First, we see it suitable to stick to current legislative approach in order to preserve the virtues of many existing practices that work well in one or a few countries and might be contrary to a strong maximum harmonizing text (Directive or Regulation).
o We regret of course to lose the speediness of an entering into effect of a Regulation but think this does not outweigh the disadvantages of a difficult political process combined with a restriction to incentivize well working local alternative solutions. We need however indeed a speedier and more effective instrument. In this respect we urge the Commission in its proposal to shorten the transposition period to a minimum needed (12 months). This can be justified by the (i) the urgency of the matter in view of meeting policy goals and (ii) the fact that it is merely a revision and not a full-blown new text. Most of the transposition has already been done following the 2013 Directive.
o Requiring Member States to enforce the access rights more quickly and concretely under the BCRD will be key. It should be analyzed how replacing the current dispute settlement procedures by more concrete enforcement competencies for the relevant sector regulators (including more strict and shorter procedures) would contribute to more effective and immediate enforceability.
o Current litigation dispute resolution procedures under the BCRD have revealed inefficient, not easing access granting to private sector infrastructure, but instead delaying and making the general rollout process more burdensome.

o A penalty regime could also be considered for non-compliance with the provisions of the Directive.
o There should also be put in place an effective monitoring by the Commission, with regular reporting and possibilities to act upon non compliances in an agile and fairly direct (short delay) manner.
o Making rules more stringent also helps (we refer to our remarks above regarding replacing ‘mays’ by ‘shall’, etc.).

Final comments

48. Final comments:

Please upload your file

The maximum file size is 1 MB
Only files of the type pdf,txt,doc,docx,odt,rtf are allowed

Contact

Contact Form