

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

Heinz

* Surname

PABISCH

* Email (this won't be published)

heinz@pabisch.at

* Organisation name

255 character(s) maximum

CMG-AE

* 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.

63050036442-29

* Country of origin

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

- | | | | |
|---|--|-------------------------------------|--|
| <input type="radio"/> Afghanistan | <input type="radio"/> Djibouti | <input type="radio"/> Libya | <input type="radio"/> Saint Martin |
| <input type="radio"/> Åland Islands | <input type="radio"/> Dominica | <input type="radio"/> Liechtenstein | <input type="radio"/> Saint Pierre and Miquelon |
| <input type="radio"/> Albania | <input type="radio"/> Dominican Republic | <input type="radio"/> Lithuania | <input type="radio"/> Saint Vincent and the Grenadines |
| <input type="radio"/> Algeria | <input type="radio"/> Ecuador | <input type="radio"/> Luxembourg | <input type="radio"/> Samoa |
| <input type="radio"/> American Samoa | <input type="radio"/> Egypt | <input type="radio"/> Macau | <input type="radio"/> San Marino |
| <input type="radio"/> Andorra | <input type="radio"/> El Salvador | <input type="radio"/> Madagascar | <input type="radio"/> São Tomé and Príncipe |
| <input type="radio"/> Angola | <input type="radio"/> Equatorial Guinea | <input type="radio"/> Malawi | <input type="radio"/> Saudi Arabia |
| <input type="radio"/> Anguilla | <input type="radio"/> Eritrea | <input type="radio"/> Malaysia | <input type="radio"/> Senegal |
| <input type="radio"/> Antarctica | <input type="radio"/> Estonia | <input type="radio"/> Maldives | <input type="radio"/> Serbia |
| <input type="radio"/> Antigua and Barbuda | <input type="radio"/> Eswatini | <input type="radio"/> Mali | <input type="radio"/> Seychelles |
| <input type="radio"/> Argentina | <input type="radio"/> Ethiopia | <input type="radio"/> Malta | <input type="radio"/> 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
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- Montenegro
- Montserrat
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- Namibia
- Nauru

- Nepal

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- 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

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- 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
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- Uzbekistan
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- Cuba
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- Cyprus
- Czechia
- Democratic Republic of the Congo
- Denmark
- Kyrgyzstan
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- Latvia
- Lebanon
- Lesotho
- Liberia
- Russia
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- Saint Barthélemy
- Saint Helena Ascension and Tristan da Cunha
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- Wallis and Futuna
- Western Sahara
- Yemen
- Zambia
- Zimbabwe

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. **For 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

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?

The Corona crisis has illustrated the necessity of nationwide widespread high quality connectivity, especially homeoffice and home schooling have highlighted the importance of very high capacity networks with significance not imaginable before. The speed to rollout very high capacity networks (VHCNs) must be increased to recover economy and to push digitalisation, unconceivable without ubiquitous fiber networks connecting all end users and end points.

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?

The application of all kind of measures to incentivise the roll-out of VHCNs at European level is of highest importance, giving guidelines, supporting private and public investment and jointly rolling out fixed and 5G fiber networks, but avoiding overwhelming regulation and inefficient infrastructure competition, especially in rural areas.

The abolishment of existing service monopolies must be prioritized.

The BCRD should therefore concentrate only on VHCNs. Since VHCN is the network of the Gigabit Society and the foundation of digitalization all endeavor and efforts of the BCRD should concentrate on the rollout of VHCN's, of fiber networks up to all kind of end users and end points and connecting them among each other: homes, enterprises, all kind of "machines", sensors, street furniture and, even more important in the future, base stations of 5G and 6G. The passive fiber infrastructure of mobile networks should be considered as part of VHCN.

In the focus should be put more and more the passive dark fiber infrastructure enabling new applications like Virtual RAN Networks.

New regulatory measures should take into account the unique and varying conditions in the individual member States without adopting a one-size-fits-all approach.

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)?

Since civil works cause the maximum capital expenditure in building VHCNs the joint rollout together with other infrastructure projects, especially electricity, gas, road, water, district heating and 5G, and the access to the data of these other stakeholders is essential.

But coordination must not be misused by stakeholders to duplicate fiber infrastructure.

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

The organization and maintenance of central data bases collecting the data of other infrastructure companies, existing and planned, shall be carried out of public administrations. In Austria this task is carried out by the NRA RTR.

The elaboration of areawide masterplans, comprising ubiquitous network design, could or should be in the responsibility of public administrations. In Austria this task is partly in the responsibility of the regional governments.

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 **effective 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 existing BCRD highlights primarily access to existing physical infrastructure, coordination of civil works, permit granting and one stop shopping for data and permit but does not cover the importance of ubiquitous VHCN roll out based on masterplans and the significance of wholesale only undertakings.

Therefore we suggest in our answers the extension of the scope to ubiquitous masterplans and rollout to prevent parallel infrastructures where not economical, sunk cost in partial networks and multiple digging up the same trench.

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
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Increased access to existing physical infrastructure suitable for high-speed broadband roll-out	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reinforced coordination of civil works	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Reduction of time and cost of permit granting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Increased access to existing physical infrastructure suitable for high-speed broadband roll-out	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please explain your answer(s):

Increased access to existing physical infrastructure is only effective for backhaul and backbone networks, but not at all for access networks, since there do not exist suitable physical infrastructures for fiber access networks of other providers besides electronic communications network operators.

Reinforced coordination of civil works is the most important measure, but can only be effective when a ubiquitous masterplan is available, providing for partial networks the duct and fiber resources for future extensions, even if carried out by another company. It can happen that the partial passive infrastructure exists isolated for a longer time. If then the partial passive network does not fit into a total design planning it is sunk cost or must be dug up a second time.

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:

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.

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	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coordination of civil works and related transparency measures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Permit-granting procedures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
In-building physical infrastructure and related access measures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Competent bodies and other horizontal provisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

Please explain your answer(s):

see 6.

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.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
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.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sector-specific EU Law on other network industries, in particular, in the energy and transport sectors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Competition policy and state aid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Other EU policies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

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

The BCRD does not enough concentrate on VHCN (see 2.).

The Code itself sticks too much to SMP undertakings (e. g. co-investment), takes not into account the importance of wholesale only business models, does not incentivise private investments and prioritizes infrastructure competition more than service competition, instead of fighting against service monopolies.

There is now the chance to include these missing factors in a new BCRD.

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

	Not beneficial at all	Not beneficial	Neutral	Beneficial	Very beneficial	No opinion
Ease of doing business across the EU	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Economies of scale for companies with operations in multiple EU countries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Regulatory stability and legal certainty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Simple and efficient administrative procedures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please explain your answer(s):

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 (Article 1).

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	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Permit-granting fees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Information about on-going or planned civil works	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Coordination of civil works and other co-investment or joint roll-out mechanisms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Information about existing physical infrastructures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Information about other elements and facilities suitable to install network elements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Access to existing physical infrastructures of electronic communication networks	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Access to existing physical infrastructures of electricity supply networks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Access to existing physical infrastructures of other supply networks (e.g. water, heat, gas supply, sewerage)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Access to other elements and facilities suitable to install network elements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Access to in-building physical infrastructures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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.

All aspects in the above table influence very significantly the deployment of VHCNs except access to existing physical infrastructures of electronic communication networks:

- because this aspect is less significant for access infrastructure, since suitable existing duct systems providing feeder and drop

connections to the buildings simply do not exist, except of infrastructures of other electronic communication networks . It is more significant for backhaul and backbone connections.

- this aspect can be detrimental, if the access is used in an unfair manner to duplicate the VHCN of the "first mover" and ruin his business case. If we agree, that under certain circumstances duplication and over building is economically adverse primarily in rural areas measures should be taken to prohibit it.

As new aspects we introduce the mandatory masterplan and ubiquitous roll out as new means for cost reduction, de facto long term cost avoidance.

1. Ubiquitous deployment of electronic communications networks

One very important new factor affecting very deeply the cost of the passive fiber infrastructure is the method of roll out. We are convinced, that a ubiquitous network deployment, covering all end users in a given area, contribute to a high amount of cost savings.

The mindset of ubiquitous deployment of VHCNs means that in a given area exists only one passive infrastructure providing connectivity to all end users.

2. Advantages of ubiquitous deployment

- Prevention of second digging up the same track

In a given area very often partial roll out takes place. The main reason is the selection of the most profitable zones, mostly those with the highest population density ("cherry picking"). Normally this partial network does not provide the necessary resources of ducts for a later extension.

Another reason for partial roll out is singular connection, to a base station, to a hospital or an industrial park. The track passes a number of buildings without providing the needful drop lines to the buildings. All these cases lead inevitably to a second digging up of the same track, thus increasing the total cost of roll out.

- Prevention of overbuilding

A ubiquitous deployment of VHCN provides very high entry barriers against overbuilding, at least in rural areas, where parallel VHCNs are economically prejudicial.

- Support of investments

Projects with ubiquitous networks are very attractive for investors, since they reduce their risks, e. g. competition by a parallel duplication network, churn rate, and increase the total sales volume.

- Prevention of digital gap

Last not least the commitment to ubiquitous network deployment avoids a digital gap.

3. Masterplan as a prerequisite for ubiquitous deployment

A prerequisite for ubiquitous roll out is a masterplan of a defined area, covering all end users and covering the total area for 5G, consisting of POP location and all feeder and drop lines and ducts. Even if a full rollout of the area is not possible in the first phase, all later extensions have to subdue themselves to the masterplan, all physical electronic infrastructure providers must use the masterplan.

4. What supports ubiquitous deployment? Wholesale only undertakings and open access networks.

The BRCD does not include different business models and their impact on strategies and regulatory tools.

The mind-set sticks only to vertical models, very often applying to incumbents.

BRCB is not regarding the gradual change in the market like in Sweden and Austria where wholesale only physical electronic infrastructure providers and neutral network providers are in full operation. They are wholesale only companies which are absent from any retail markets for electronic communications services. Their customers are the plenty of service providers. They use Open Layer Models and separate passive physical infrastructure (Layer 1) from active operation (Layer 2) and service provision (Layer 3). This proves to be successful and is favored by investors and banks. Wholesale only business models shift competition from the physical layer to the service layer, where a maximum of service competition takes place.

These wholesale only undertakings applying open access business models are predestined to deploy ubiquitous VHCNs.

They build passive fiber infrastructures and do not care about partial rollout and cherry picking. They generate very high entrance barriers against overbuilding and infrastructure duplication. They generate the maximum number of end users. Therefore they are very attractive for their customers, which are the plenty of service providers and very often mobile network operators. And they are also very attractive for banks and investors because they reduce their risks.

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.

1. Different types of areas where the network deployment is taking place.

The ubiquitous rollout of VHCNs as described in 12. is efficient for all types of area, where is the same scope: all kind of human users and objects shall be connected by one network, designed in one masterplan.

For urban areas there you may consider a difference regarding Infrastructure competition. Competition of parallel networks in urban areas is imaginable and need not be so uneconomical as in rural areas.

But manifold up digging is much more difficult and more expensive in urban than in rural areas, therefore the existance of a masteplan and a central information data base with all physical infrastructures are indispensable. There should not exist areas which are not covered by a masterplan.

2. Access technologies

The concept of ubiquitous network deployment fits for all media: fiber, copper and air. But in the BCRD the focus should be put on VHCN and 5G and a jointly rolling out of fiber and 5G networks.

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:

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:

As elaborated in prior statements BCRD should be focused on deployment of VHCNs. References to high-speed networks of above 30 Mbps or other benchmarks with Mbit/s figures are no longer appropriate. As elaborated in 12. and 13. the scope of the BCRD should be extended to ubiquitous network deployment with the prerequisite of a masterplan and the supporting role of wholesale only undertakings in reducing costs.

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.

We believe in the figures of 70 to 80%, given in a number publications, are correct. Practical experience has shown that the proportion of civil works within the cost of physical infrastructure is about 70 %.

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	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Lack of information on existing physical infrastructure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulty to agree on terms and conditions of access with owner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Slow/ineffective dispute resolution process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Other (please specify)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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

In building access networks suitable existing infrastructure does not exist (see 6. and 12.).

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	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physical infrastructure owned by operators of networks other than electronic communications networks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

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

It should be differentiated between access to physical infrastructure of access networks and backhaul /backbone networks (see 12.).

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.

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	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of space	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Safety and public health concerns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Integrity and security	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Risk of serious interferences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of alternative means	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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

Although these criteria are appropriate especially security, critical infrastructure and privacy arguments are often used as excuse for refusal of access or coordination.

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.

The current provisions on high-speed-ready in-building physical infrastructure have been very valuable since they have been integrated into Austrian Law and created awareness in the house building and management sector.

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.

We understand what you call "neutral host infrastructures" are passive infrastructures built by wholesale only undertakings providing ubiquitous passive infrastructure as described in 2. and 12. 4. Mostly they work together with neutral network operators which are also wholesale only undertakings. Access seekers can either get access directly to the dark fiber, applying the Passive Layer Open Model (PLOM), or with bit stream access via the neutral operator, applying the Three Layer Open Model (3LOM) see 12.4.. In Austria are both business models successfully in use.

Infrastructure rollout benefit much more from these open business models compared to vertical models: Wholesale only physical infrastructure providers build ubiquitous networks, thus offering a maximum of potential customers/end users to access seeking service providers. Very high entrance barriers of ubiquitous passive infrastructures avoid building of parallel networks and transfer the competition to the service level, where a diversity of services increase the business. Cost and risk reduction attract investors.

The described advantages of availability and access to neutral host infrastructures as we understand them and provided by preferably wholesale only providers are independent of the type of area as long they are ubiquitous. Access technology is irrelevant since we consider passive VHC infrastructure with equivalent connection of end users and basestations.

Therefore neutral host infrastructures facilitate the deployment of electronic communications networks in combination with wholesale only undertakings.

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:

We believe in the figures 70 to 80% published in several scientific studies.
Our experience has shown that civil works are roughly 70% of costs linked to physical infrastructure.

Mobile/wireless networks – cost savings

- Up to 10%
- 10%-20%

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

Please explain your answer:

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	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gas networks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Electricity networks (including public lightning)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heating networks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water networks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transport networks (including railways, roads, ports and airports)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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

Coordination of VHCN civil works with other electronic communications networks should be avoided or even prohibited when it leads to duplication of VHCNs of the "first mover" and ruins his business case. All other types of above described networks are very relevant for coordinating civil works with deployment of VHCNs, as well as access networks as backhaul and backbone networks. All of them except transport networks can provide trenches into the building. It must be differentiated between the electronic transport networks of railway and motorway companies and roads as themselves. Electronic transport networks of railway and motorway companies are not suitable for coordination with access networks, only for backhaul and backbone networks. Quite different is the coordination with refurbishment projects of roads: here cost reduction is not achieved by shared use of the trench, but by avoiding partly the recovery cost of the road surface. Very often the refurbishment of a road must used for simultaneous digging, since after the completion of the refurbishment the road is closed for civil works in the next 5 or 7 years.

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?

Joint scheduling is difficult and time consuming. Very often preliminary lead time is too short.

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.

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:

We do not understand the differentiation between coordination of civil works financed by public means and coordination of civil works not financed by public means. Actually there is no difference in the ways to coordinate. As stated in 12. and 22. the avoidance or even the prohibition of duplication of VHCNs should be considered very seriously. The "first mover" should be protected, the "dig once" principle obliged. At least wholesale only passive infrastructure providers should benefit of such protection.

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	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Physical infrastructure from operators of other networks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Physical infrastructure from public bodies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Other elements and facilities suitable to install network elements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
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)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Public buildings or facilities that are not part of a network (e.g. administrative buildings, communal centres)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Civil works in progress or planned by electronic communications operators	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Civil works in progress or planned by other network operators	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Civil works in progress or planned by public authorities, in the short, medium and long term (such as new or renovated industrial areas)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Acquisition and construction of sites for the deployment of mobile base stations, in progress or planned.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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).

All elements listed above except buildings are vera relevant. For us it is not quite clear what contribution is expected by buildings - space for POPs, switchung centers? In shopping centers e. g. there will be built private campus networks, not part of public networks, therefore not relavant.

The quick and "one stop" availabilty of information is the absolute precondition for efficient access to physical infrastructure and coordination of civil works.

The relevance is independent of the deployment area, since there is an equal importance of cost reduction in all areas.

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
- 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.

Georeferenced data especially of the routes and trenches are very important.
In Austria In the ZIS Verordnung RTR has very detailed listed the minimum information.

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:

"One stop" availability ist crucial.

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)?

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.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of information concerning the conditions and procedures applicable for granting permits.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Application for permits cannot be submitted by electronic means	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Multiplicity of permits needed for electronic communications network deployment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of coordination between the various authorities competent for granting permits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of explicit rules including on compensation in case requirements for permit-granting procedures are not met, in particular deadlines and refusal conditions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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).

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	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Single entry point (one stop shop), acting as an intermediary, routing permit applications to any competent authority (national, regional or local)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Integrated permit granting procedure that encompasses all different procedures of each of the competent authorities involved	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coordination and monitoring by a single body (or set of bodies) of all the involved authorities' permit granting procedures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Centralisation of the competence for all permits in one authority within the Member State	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Harmonization of permit procedures at Member State level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Harmonization of permit procedures at EU level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please explain your response, and give suggestions for implementation:

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:

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?

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	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Operation of fixed networks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Deployment of mobile/wireless networks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Operation of mobile/wireless networks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please explain your answer for each of the above categories:

VHCNs, i. e. fiber networks up to the building and the antenna, are much less energy consuming than copper networks and cause less CO2 emissions, proven in several scientific studies.

VHCNs are therefore the key for the European Green Deal.

VHCNs contribute by their long life cycle and comparatively low maintenance requirements, which result in low material consumption in the overall product lifecycle, much to the Green Deal.

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	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Type of networks, e.g. fixed or wireless/mobile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Manufacturing of the equipment, materials used and logistics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Other (please specify)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please explain your answer(s):

Deployment techniques, especially digging technologies, are permanently improved to speed up digging and trenching and thus reducing CO2 emission.

The implementation of VHCNs, full fibernetworks (see 36.) and a plan for copper shut down on European level would strengthen the European Green Deal. Such a powerful Green Deal would speed up the European and national roll out of VHCNs.

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)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carbon intensity of energy sources used for the generation of power supplying the network	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please explain your answer(s):

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	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Technology generation used (for mobile), e.g. 4G/5G	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Energy efficiency of network equipment used	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Passively shared network	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Actively shared network	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Network deployed with coordinated civil works with other networks (electronic communications, electricity, gas, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Other (please specify)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please explain your answer(s):

The medium used for reducing CO2 is full fiber connectivity.
 As mentioned several times above the avoidance of duplicated VHCNs by sharing the passive infrastructure, not only antennas but also the fiber infrastructure is essential. Even more appropriate is sharing the active elements for operation, thus avoiding multiple active equipment and manifold power consumption of several parallel operating active providers.
 Consequently, bitstream open access is the most sustainable and ecologically sensible way to share a network. Open Access at the active wholesale level pays directly into the goals of the Green New Deal - see wholesale open models ALOM and 3LOM see 12. 4.

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	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Permit requirements limited to prior communication only	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Reduction or abolishment of permit fees related to the deployment of the specific network	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
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	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Other (please specify)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please explain your answer(s):

In Austria there are no access fees for roads. This is supporting very much the rollout.

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)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Transparency concerning physical infrastructure (Art. 4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Coordination of civil works (Art. 5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Transparency concerning planned civil works (Art. 6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Access to in-building physical infrastructure (Art. 9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

Please explain your answer(s):

The existence of dispute settlement systems, even if costly and time consuming, is essential. The pure possibility to start a dispute settlement helps to reach an agreement. If a specific case has been solved by the dispute settlement body, all following disputes similar to this first case can be adapted to the existing judgment and stakeholders are demotivated to enter a new dispute settlement process.

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	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Too long dispute resolution process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of rules on apportioning the cost (in case of coordination of civil works, Art. 5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of clarity on "fair and reasonable terms" concept (Art. 3 and 5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The need for payment of fees when referring a case to the Dispute Settlement Body	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other reasons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please explain your answer(s):

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	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Setting rules on apportioning the cost (in case of coordination of civil works, Art. 5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Guaranteeing a free process.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please explain your answer(s):

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	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The regulation providing infringements is broad and general	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The penalties imposed are not dissuasive enough	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please explain your answer(s):

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:

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)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Directive with maximum harmonization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regulation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other instrument	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please explain your answer(s):

Final comments

48. Final comments:

As elaborated primarily in 12., 13. and 22. the scope of the BCRD should be extended to mandatory ubiquitous network deployment with the prerequisite of a masterplan and the supporting role of wholesale only undertakings. Means shall be taken to prohibit VHCN duplication and overbuilding, supporting a "dig once" principle.

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