

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

Fields marked with \* are mandatory.

## Introduction

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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

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### \* 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

David

\* Surname

Yoshikawa

\* Email (this won't be published)

d.yoshikawa@minezk.nl

\* Scope

- International
- Local

- National
- Regional

\* Level of governance

- Parliament
- Authority
- Agency

\* Organisation name

*255 character(s) maximum*

Ministry of Economic Affairs and Climate Policy

\* 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.

\* 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            |

- Angola
- Anguilla
- Antarctica
- Antigua and Barbuda
- Argentina
- Armenia
- Aruba
- Australia
- Austria
- Azerbaijan
- Bahamas
- Bahrain
- Bangladesh
- Barbados
- Belarus
- Belgium
- Belize
- Benin
- Bermuda
- Bhutan
- Bolivia
- Bonaire Saint Eustatius and Saba
- Bosnia and Herzegovina
- Equatorial Guinea
- Eritrea
- Estonia
- Eswatini
- Ethiopia
- 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
- Malawi
- Malaysia
- Maldives
- Mali
- Malta
- Marshall Islands
- Martinique
- Mauritania
- Mauritius
- Mayotte
- Mexico
- Micronesia
- Moldova
- Monaco
- Mongolia
- Montenegro
- Montserrat
- Morocco
- Mozambique
- Myanmar /Burma
- Namibia
- Nauru
- Nepal
- Saudi Arabia
- Senegal
- Serbia
- Seychelles
- Sierra Leone
- 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

- Botswana
- Bouvet Island
- Brazil
- British Indian Ocean Territory
- British Virgin Islands
- 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
  
- Guatemala
- Guernsey
- Guinea
- Guinea-Bissau
  
- Guyana
  
- Haiti
- Heard Island and McDonald Islands
- Honduras
- Hong Kong
  
- Hungary
  
- Iceland
  
- India
- Indonesia
- Iran
  
- Iraq
  
- Ireland
- Isle of Man
- Israel
  
- Italy
  
- Jamaica
- Japan
  
- Jersey
  
- Netherlands
- New Caledonia
- New Zealand
- Nicaragua
  
- Niger
  
- Nigeria
- Niue
  
- Norfolk Island
- Northern Mariana Islands
- North Korea
  
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- Palau
  
- Palestine
- Panama
- Papua New Guinea
- Paraguay
  
- Peru
- Philippines
  
- Pitcairn Islands
  
- Taiwan
- Tajikistan
- Tanzania
- Thailand
  
- The Gambia
  
- Timor-Leste
- Togo
  
- Tokelau
- Tonga
  
- Trinidad and Tobago
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- Turkey
- Turkmenistan
- Turks and Caicos Islands
- Tuvalu
  
- Uganda
- Ukraine
- United Arab Emirates
- United Kingdom
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- Denmark
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- Russia
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- Saint Helena, Ascension and Tristan da Cunha
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- Vatican City
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- 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

Please indicate what functions this Public Authority/Body performs in the scope of the Broadband Cost Reduction Directive (several functions may be selected):

- Competent authority/body to grant or refuse permits for building or civil works related to the deployment of electronic communications networks.
- Competent authority/body to provide access to public property (e.g. administrative buildings, zones adjacent to communication routes) or other elements and facilities suitable to build or install network elements, including street furniture.
- Dispute settlement body for the tasks assigned by the Broadband Cost Reduction Directive (Art. 10(1)).
- Single information point for the tasks assigned by the Broadband Cost Reduction Directive (Art.10(4)).
- Competent authority/body to apply penalties for infringements of national measures pursuant to the Broadband Cost Reduction Directive (Art. 11).
- Other function

Please specify the function:

Main legislator with respect to telecom related matters

## General questions

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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 shows that digital technologies and the digital infrastructure are of great importance to keep our economy, healthcare, education running as much as possible. Very high-capacity broadband connectivity infrastructure is a fundament block for the digital transformation, so in order to maintain the acceleration in digitization that has arisen out of the necessity of the crisis, continuous investment in VHCN is needed.

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 Netherlands values the balance between harmonization to promote the digital internal market and sufficient possibility for Member States to determine internal policy according to the respective national situation.

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)?

Telecom operators in the NL indicate that coordination of civil works for the joint deployment of fixed ECN's and utility networks are of limited value due to a different deployment pace and argue that coordination of civil works with utility companies leads to higher costs of and delays in network deployment. In case of joint deployment of fixed ECN's, telecom operators are reluctant to share their roll-out plans for competitive reasons. .

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

Public administration should make sure that all relevant information concerning the conditions and procedures applicable for granting permits for civil works needed with a view to deploying elements of high-speed electronic communications networks, are (publicly) available and that the maximum deadlines for the granting of permits are met. Furthermore, the Ministry of Economic Affairs and Climate Policy strives for the harmonization of local policies with a view to deploying elements of high-speed electronic communications networks, where possible.

## Evaluation of the overall functioning of the Broadband Cost Reduction Directive

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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.

Please refer to our non-paper added to this questionnaire.

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

Please explain your answer(s):

Please refer to our non-paper added to this questionnaire.

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:

Please refer to our non-paper added to this questionnaire.

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.

Not available

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

Please explain your answer(s):

Please refer to our non-paper added to this questionnaire.

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 <a href="#">regulatory framework</a> , 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 <a href="#">European Electronic Communications Code</a> , 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.

Please also refer to our non-paper added to this questionnaire.

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 checked="" type="radio"/>



Please explain your answer(s):

## Subject matter and scope

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

(Public) availability of relevant information concerning the conditions and procedures applicable for granting permits for civil works and obtaining the deadlines for granting such permits are an important factor that can influence the timely and efficient deployment of electronic communications networks. Furthermore, it is important that fees charged for the granting of permits for civil works are objectively justified, transparent, non-discriminatory and proportionate to their intended purpose and that they cover only the administrative costs incurred for the provision of such permits. With respect to the access to physical infrastructure, fixed telecom operators in the NL indicate that there is no demand for access to existing physical infrastructures of utility companies.

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.

Access to existing physical infrastructure (including buildings and street furniture) controlled by public bodies, which is capable of hosting VHCN elements, on similar conditions as those set in Article 57 of the Code, could positively affect the timely and efficient deployment of wireless networks with macro cells. However, this very much depends on the demand of extra macro cells and on the specific radio planning of a mobile operator in a certain area.

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:

The revision of the BCRD should aim for legal consistency with the provisions and definitions in the overall framework of the Telecom Code (Electronic Communications Code). Please also refer to our non-paper added to this questionnaire.

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:

The Directive should reflect the reality of new technologies and the Gigabit target the EU has set for 2025. Therefore, the current 30 Megabit per second threshold for high speed networks has become obsolete and should be shifted to VHCN and 100 Mbps.

## Access and availability of physical infrastructure

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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.

N/A

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.

N/A

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

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

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



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

Telecom operators in the NL indicate that physical infrastructure of other network operators are seldomly used and that the swapping of ducts between telecom operators is mostly taking place on a voluntary basis.

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 the last couple of years, the Dutch regulator (ACM) has not handled many disputes about access to physical infrastructure (chapter 5a of the Dutch Telecommunications Act). According to the Dutch Telecommunications Act, the regulator must decide within two months on a dispute about chapter 5a of the Dutch Telecommunications Act. This period is shorter than the decision period that applies to regular dispute applications (that decision period is four months). According to the Dutch Telecommunications Act, the regulator is obliged to publish dispute decisions in the Government Gazette (Staatscourant). According to the ACM Institutions Act (Instellingswet ACM), the regulator can also choose to publish dispute decisions on its website. As a rule, the regulator publishes dispute decisions, because the regulator considers it important that other interested parties can take note of the content of the dispute decisions. As a result, the published dispute decisions provide guidance to all interested parties.

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

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

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.

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.

For specific areas where deployment of ECNs is challenging and/or costly (e.g. busy innercity areas with highly congested subsoil or less densely populated areas), availability of certain neutral host infrastructure could be useful to speed up the deployment of fixed VHCN. In the NL there are examples where neutral host infrastructures have been deployed (e.g. underground ducts) during civil engineering works at busy crossroads and as part of the development of new business parks.

## Coordination of civil works

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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:

N/A

#### Mobile/wireless networks – cost savings

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

Please explain your answer:

N/A

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

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

Telecom operators indicate that the deployment of fixed ECNs and of utility networks take place at various pace, so therefore coordination of civil works for simultaneous deployment is of limited value for telecom operators. Furthermore, telecom operators state that coordination of civil works with utility companies leads to higher costs of and delays in network deployment.

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?

Please refer to answer to Q24.

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.

Telecom operators indicate that requests for coordination of civil works financed by public means has not been of relevance to them.

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:

Since in the NL the coordination of civil works for the joint deployment of fixed ECNs and utility networks are of limited value and telecom operators are reluctant to jointly roll-out their ECNs (mainly FTTH) due to competitive reasons, NL sees no reason to extend the obligation. However, the availability of certain neutral host infrastructure could be useful to speed up the deployment of fixed VHCN in specific areas as stated in the answer to question 22.

## Transparency measures

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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 checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physical infrastructure from operators of other networks	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physical infrastructure from public bodies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other elements and facilities suitable to install network elements	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input 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 type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" 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 type="radio"/>	<input checked="" 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 checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Civil works in progress or planned by other network operators	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Civil works in progress or planned by public authorities, in	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

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.	<input type="radio"/>	<input type="radio"/>	<input checked="" 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 checked="" 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).

It is important that any further changes with regards to extended functions and transparency of information via the SIP, should only be considered if they provide clear added value to the stakeholders. Unnecessary extra administrative burden for businesses and government should be avoided.

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.

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:

In the NL there are 2 repositories: the KLIC system for underground and related utilities and the Antennaregister for antenna-installations.

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)?

Since telecom operators in the NL indicate that the use of physical infrastructure and the coordination of civil works for the joint deployment of fixed networks are of limited relevance to them, there is no urge for further collaboration on the different administrative levels in the NL to maximise transparency as regards information on existing physical infrastructures and planned civil works.

## Permit-granting procedures

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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 checked="" 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 checked="" 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 checked="" 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 checked="" 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 checked="" 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 checked="" type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" 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 checked="" 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 checked="" 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 checked="" 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 checked="" 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 checked="" type="radio"/>
Harmonization of permit procedures at Member State level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" 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 checked="" type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" 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:

In the NL there exist already a permit exemption for the construction of antenna installations for mobile telecom which are not higher than 5 meters. For the construction, maintenance or clearance of telecom cables and the construction of antenna installations higher than 5 meters, permits are needed and granting takes place within 8 weeks (+ 8 weeks extension period). The NL is skeptical about applying tacit approval since the permit granting authority may have valid reasons for the (extra) time needed to grant a permit due to specific (local) circumstances. Measures that can speed up the permit granting process could be found in the fields of increased transparency and availability of information concerning the conditions and procedures applicable for granting permits, harmonization of such conditions and procedures (where possible), and enabling the submission of permit applications through the use of (similar) electronic procedures and/or systems.

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 the NL telecom operators of FTTH networks are reluctant to jointly roll-out their fiber networks due to competitive reasons (e.g. first mover advantages).

## Environmental impact of electronic communications networks

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

Please explain your answer for each of the above categories:

It depends on the type of networks how much energy is used, e.g. full fiber based networks are more energy efficient than copper based networks.

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



Please explain your answer(s):

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 checked="" 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 checked="" 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 checked="" 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 checked="" type="radio"/>	<input type="radio"/>	<input 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 checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Passively shared network	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Actively shared network	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input 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 checked="" 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 checked="" type="radio"/>

Please explain your answer(s):

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 type="radio"/>
Permit requirements limited to prior communication only	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input 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 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 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):

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

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

Please explain your answer(s):

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 checked="" type="radio"/>
Too long dispute resolution process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" 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 checked="" 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 checked="" 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 checked="" type="radio"/>
Other reasons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" 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 checked="" 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 checked="" type="radio"/>
Guaranteeing a free process.	<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 checked="" 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 checked="" type="radio"/>
The regulation providing infringements is broad and general	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
The penalties imposed are not dissuasive enough	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Please explain your answer(s):

## Legal instrument

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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 checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Directive with maximum harmonization	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regulation	<input checked="" 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 checked="" type="radio"/>

Please explain your answer(s):

Please also refer to our non-paper added to this questionnaire.

## Final comments

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48. Final comments:

Please also refer to our non-paper added to this questionnaire.

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## Contact

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