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Guidelines on State aid for broadband networks

(2023/C 36/01)

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1. INTRODUCTION

1. Connectivity is a fundamental building block of digital transformation. It is of strategic importance for growth and innovation in all economic sectors of the Union and for social and territorial cohesion.
2. The Union has set ambitious connectivity objectives in the Gigabit Communication ⁽¹⁾, the Communication Shaping Europe's digital future ⁽²⁾, the Digital Compass Communication ⁽³⁾ and in its proposal for a decision of the European Parliament and of the Council establishing the 2030 Policy Programme Path to the Digital Decade ⁽⁴⁾ (DDPP proposal).
3. In the Gigabit Communication, the Commission set out the following connectivity objectives for 2025: (a) all Union households, rural or urban, should have an internet connectivity with a download speed of at least 100 Mbps, upgradable to 1 Gbps; (b) socio-economic drivers, such as digitally intensive enterprises, schools, hospitals and public administration should benefit from a download speed of at least 1 Gbps and an upload speed of at least 1 Gbps; and (c) all urban areas and major transport paths should have uninterrupted 5G coverage ⁽⁵⁾.
4. The Communication Shaping Europe's digital future explains that the expression '100 Mbps, upgradable to Gigabit speed' reflects the Commission's expectation that, as the decade progresses, households will increasingly need 1 Gbps speed ⁽⁶⁾.
5. The Digital Compass Communication states, as the connectivity objective for 2030, that all Union households should be covered by a Gigabit network ⁽⁷⁾, and all populated areas should be covered by 5G ⁽⁸⁾. The DDPP proposal underlines that 'societal needs for upload and download bandwidth are constantly growing. By 2030, networks with gigabit speeds should become available at accessible conditions for all those who need or wish such capacity' ⁽⁹⁾.
6. To achieve the Union's objectives for 2025 and 2030, adequate investment is needed. Such investments primarily come from private investors and may be complemented, where necessary, by public funds, in accordance with State aid rules.
7. The COVID-19 pandemic underlined the importance of performant electronic communications networks for people, businesses and public institutions. On 27 May 2020, the Commission put forward its proposal for a major recovery plan to mitigate the economic and social impact of the pandemic, NextGenerationEU ⁽¹⁰⁾. The Recovery and Resilience Facility (RRF) established by Regulation (EU) 2021/241 of the European Parliament and of the Council ⁽¹¹⁾ is part of that plan. One of the key priorities of the RRF is to support the digital transition, through connectivity measures aimed in particular at bridging the 'digital divide' between urban and rural areas and addressing market failures with respect to the deployment of performant networks. Regulation (EU) 2021/241 requires that each Member State devote at least 20 % of the allocated funding to measures fostering the digital transition.

⁽¹⁾ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions of 14 September 2016, *Connectivity for a Competitive Digital Single Market – Towards a European Gigabit Society*, COM(2016) 587 final.

⁽²⁾ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee the Committee of Regions of 19 February 2020, *Shaping Europe's digital future*, COM(2020) 67 final.

⁽³⁾ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee the Committee of Regions of 9 March 2021, *2030 Digital Compass: the European way for the Digital Decade*, COM(2021) 118 final.

⁽⁴⁾ Proposal for a Decision of the European Parliament and of the Council establishing the 2030 Policy Programme 'Path to the Digital Decade', COM(2021) 574 final, 2021/0293 (COD).

⁽⁵⁾ Section 3 of the Gigabit Communication.

⁽⁶⁾ Endnote 3 of the Communication on Shaping Europe's digital future.

⁽⁷⁾ At the current stage of development, fibre to the home, fibre to the building and performant cable networks (at least DOCSIS 3.1) are able to deliver 1 Gbps download speed.

⁽⁸⁾ Section 3.2 of the Digital Compass Communication.

⁽⁹⁾ Recital (7) of the DDPP proposal.

⁽¹⁰⁾ Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic And Social Committee and the Committee of the Regions of 27 May 2020, *Europe's moment: Repair and Prepare for the Next Generation*, COM(2020) 456 final.

⁽¹¹⁾ Regulation (EU) 2021/241 of the European Parliament and of the Council of 12 February 2021 establishing the Recovery and Resilience Facility (OJ L 57, 18.2.2021, p. 17). See also Council Regulation (EU) 2020/2094 of 14 December 2020 establishing a European Union Recovery Instrument to support the recovery in the aftermath of the COVID-19 crisis (OJ L 433 I, 22.12.2020, p. 23).

8. Moreover, electronic communications networks can help achieving sustainability goals. The Union's 2050 objective of climate neutrality, as set out in the European Green Deal ⁽¹²⁾ and in Regulation (EU) 2021/1119 of the European Parliament and of the Council ⁽¹³⁾, cannot be reached without a fundamental digital transformation of society. One of the essential components of the digital transformation of the Union is the development of secured and performant electronic communications networks that help to make an important contribution to the Union's main environmental objectives. At the same time electronic communications networks themselves will have to become more sustainable, energy, and resource efficient.
9. The electronic communications sector has undergone a thorough liberalisation process and is now subject to sectoral regulation. Directive (EU) 2018/1972 of the European Parliament and of the Council ⁽¹⁴⁾ provides the regulatory framework for electronic communications.
10. Competition policy, and State aid rules in particular, have an important role to play in fulfilling digital strategy objectives and developing a co-ordinated investment strategy for connectivity. The purpose of State aid control in the broadband sector is to ensure that State aid will result in a higher level of broadband coverage and use than would be the case without State intervention, while supporting higher quality, more affordable services and pro-competitive investments. Any State intervention should limit as much as possible the risk of crowding out private investments, altering commercial investment incentives and ultimately distorting competition contrary to the common interest.
11. In 2020, the Commission launched an evaluation of the 2013 Broadband Guidelines ⁽¹⁵⁾ to assess whether they were still fit for purpose. The results ⁽¹⁶⁾ showed that although, in principle, the rules had worked effectively, targeted adjustments were needed to reflect recent market and technology developments and take into account legislative developments and current priorities ⁽¹⁷⁾.

2. SCOPE, DEFINITIONS, TYPES OF BROADBAND NETWORKS

2.1. Scope

12. To prevent State aid from unduly distorting or threatening to distort competition in the internal market and significantly affecting trade between Member States, Article 107(1) of the Treaty on the Functioning of the European Union ('the Treaty') lays down the principle that State aid is prohibited. In certain cases, however, such aid may be compatible with the internal market on the basis of Article 107(2) and (3) of the Treaty.
13. Member States are required to notify the Commission of any plans to grant State aid pursuant to Article 108(3) of the Treaty, unless the aid pertains to one of the categories that are exempted from the notification requirement pursuant to Article 109 of the Treaty ⁽¹⁸⁾.

⁽¹²⁾ Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions of 11 December 2019, *The European Green Deal*, COM(2019) 640 final.

⁽¹³⁾ Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 (European Climate Law) (OJ L 243, 9.7.2021, p. 1).

⁽¹⁴⁾ Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code (OJ L 321, 17.12.2018, p. 36).

⁽¹⁵⁾ Communication from the Commission of 26 January 2013, 'EU Guidelines for the application of State aid rules in relation to the rapid deployment of broadband networks' (OJ C 25, 26.1.2013, p. 1) (the '2013 Broadband Guidelines').

⁽¹⁶⁾ See the Commission staff working document on the results of the evaluation of 7 July 2021, SWD(2021) 195 final.

⁽¹⁷⁾ See the Commission staff working document executive summary of the evaluation of the State Aid rules for broadband infrastructure deployment of 7 July 2021, SWD(2021) 194 final.

⁽¹⁸⁾ For example, Commission Regulation (EU) No 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty (OJ L 187, 26.6.2014, p. 1).

14. These Guidelines provide guidance on how the Commission will assess, on the basis of Article 106(2), Article 107(2), point (a), and Article 107(3), point (c), of the Treaty, the compatibility of State aid for the deployment and take-up of fixed and mobile broadband networks and services.
15. State interventions not fulfilling one of the conditions laid down in Article 107(1) of the Treaty do not constitute State aid. Consequently, they are not subject to the compatibility assessment laid down in these Guidelines.
16. In particular, Union funding that is centrally managed by the institutions, agencies, joint undertakings or other bodies of the Union and that is not directly or indirectly under the control of Member States ⁽¹⁹⁾ does not constitute State aid.
17. Aid for deployment and take-up of broadband networks and services may not be awarded to undertakings in difficulty as set out in the Commission's Guidelines on State aid for rescuing and restructuring non-financial undertakings in difficulty ⁽²⁰⁾.
18. When assessing aid in favour of an undertaking that is subject to an outstanding recovery order following a previous Commission decision that declared an aid illegal and incompatible with the internal market, the Commission will take account of the amount of aid still to be recovered ⁽²¹⁾.

2.2. Definitions

19. For the purposes of these Guidelines, the following definitions apply:

- (a) 'broadband network' means an electronic communications network, as defined in Article 2, point (1), of Directive (EU) 2018/1972, delivering broadband electronic communications services ('broadband services');
- (b) 'access network' means the segment of a broadband network that connects the backhaul network with the end users' premises or devices;
- (c) 'fixed access network' means a broadband network providing data transmission services to end users at a fixed location using a variety of technologies, including cable, digital subscriber line ('DSL'), optical fibres and wireless;
- (d) 'fixed ultrafast access network' means a fixed access network delivering broadband services of at least 100 Mbps download speed ('fixed ultrafast broadband services');
- (e) 'mobile access network' means a wireless communications network that provides connectivity to end users at any location in the area covered by the network using one or several International Mobile Telecommunications ('IMT') standards;
- (f) 'backhaul network' means the part of a network that connects the access network to the backbone network. It is the part of the network where the traffic of end users is aggregated;
- (g) 'backbone network' means the core network that interconnects backhaul networks from different geographic areas or regions;
- (h) 'active network' means a broadband network with active components (for instance, transponders, routers and switches, active antennas) and passive components (for instance, ducts, poles, masts, dark fibres, cabinets and manholes);

⁽¹⁹⁾ Such as funding provided under Regulation (EU) 2021/1153 of the European Parliament and of the Council of 7 July 2021 establishing the Connecting Europe Facility and repealing Regulations (EU) No 1316/2013 and (EU) No 283/2014 (OJ L 249, 14.7.2021, p. 38).

⁽²⁰⁾ Communication from the Commission *Guidelines on State aid for rescuing and restructuring non-financial undertakings in difficulty*, section 2.2 (OJ C 249, 31.7.2014, p. 1).

⁽²¹⁾ See the judgment of 13 September 1995, *TWD v Commission*, joined cases T-244/93 and T-486/93, EU:T:1995:160, paragraph 56. See also the Communication from the Commission, *Commission Notice on the recovery of unlawful and incompatible State aid* (OJ C 247, 23.7.2019, p. 1).

- (i) 'infrastructure' means a broadband network without any active component and typically comprising physical infrastructure, as defined in Article 2, second paragraph, point (2), of Directive 2014/61/EU of the European Parliament and of the Council ⁽²²⁾, and cables (including dark fibre and copper cables);
- (j) 'peak time' means the time of the day with a typical duration of one hour where the network load is usually at its maximum;
- (k) 'peak-time conditions' means the conditions under which the network is expected to operate at 'peak time';
- (l) 'premises passed' means end users' premises to which, upon request from end users and within 4 weeks from the date of the request, an operator can provide broadband services (regardless of whether those premises are already connected to the network or not). The price charged by the operator for providing such broadband services at end users' premises in this case must not exceed normal connection fees. This means that it must not include any additional or exceptional cost as compared to the standard commercial practice and, in any case, must not exceed the usual price in the Member State concerned. That price must be determined by the competent national authority;
- (m) 'relevant time horizon' means a time horizon used for verifying planned private investments and corresponds to the time frame that the Member State estimates for deploying the planned State-funded network, starting from the moment of publication of the public consultation on the planned State intervention until the entry into operation of the network, namely until the start of the provision of wholesale or retail services on the State-funded network. The relevant time horizon taken into consideration cannot be shorter than 2 years;
- (n) 'overbuilding' means deploying a State-funded network in addition to one or more existing networks in a certain area;
- (o) 'crowding out' means an economic effect of a State intervention that is conducive to disincentivising, preventing, driving down or even eliminating private investments. This may be the case, for instance, if private investors see the profitability of their prior or planned investment decreasing because of State aid to an alternative investment, which may lead them to decide to reduce, discontinue, alter their investment, withdraw from the market altogether or decide not to enter into a new market or a geographic area;
- (p) 'step change' means a significant improvement achieved by State-funded networks, bringing substantial new investments in the broadband networks and significant new capabilities to the market in terms of broadband services availability, capacity, speed or other relevant characteristics of the network and competition;
- (q) 'digital divide' means the gap between those areas or regions that have access to adequate broadband services and those that do not.

2.3. Types of broadband networks

20. For the purposes of assessing State aid, these Guidelines distinguish between fixed ultrafast access networks, mobile access networks and backhaul networks, as further described in Sections 2.3.1, 2.3.2 and 2.3.3. 'Fixed ultrafast access networks' and 'mobile access networks' are used interchangeably with 'fixed networks' and, respectively, 'mobile networks'. All speeds mentioned in these Guidelines are intended under peak-time conditions.

⁽²²⁾ Directive 2014/61/EU of the European Parliament and of the Council of 15 May 2014 on measures to reduce the cost of deploying high-speed electronic communications networks (OJ L 155, 23.5.2014, p. 1).

2.3.1. *Fixed ultrafast access networks*

21. At the current stage of technological development, there are different types of fixed ultrafast access networks, including: (a) fibre-based networks (FTTx) ⁽²³⁾; and (b) advanced upgraded cable networks using at least the 'DOCSIS 3.0' standard ⁽²⁴⁾. Wireless networks such as certain fixed wireless access networks ⁽²⁵⁾ and satellite networks ⁽²⁶⁾ may also be able to provide fixed ultrafast broadband services.

2.3.2. *Mobile access networks*

22. At the current stage of market and technological development, several generations of mobile technologies coexist ⁽²⁷⁾.
23. The transition to each new mobile generation is generally incremental ⁽²⁸⁾. At the current stage, 4G networks continue to be deployed in some parts of the Union and deployments of 5G non-standalone networks rely on existing 4G Long Term Evolution (LTE) and LTE-Advanced networks ⁽²⁹⁾. 5G networks are expected to become progressively standalone and not rely on existing 4G networks in the future. 5G standalone networks are expected to enable more performant mobile services, including lower latency and higher transmission capabilities, and enable advanced usage scenarios and applications.
24. To ensure an effective and efficient use of radio spectrum Member States may attach conditions to individual rights of use for radio spectrum, such as coverage and quality of service obligations. Such obligations may include geographical, population and transport paths coverage with certain minimum quality of service requirements ⁽³⁰⁾.

⁽²³⁾ FTTx refers to different types of networks including fibre to the building (FTTB), fibre to the home (FTTH), fibre to the premises (FTTP) and fibre to the cabinet (FTTC). However, FTTC networks are only able to provide fixed ultrafast services when using, over loops of a certain length, vectoring (technology that improves the performance of VDSL (very high-speed digital subscriber line)).

⁽²⁴⁾ DOCSIS stands for 'data over cable service interface specifications'. It is a globally-recognised telecommunications standard which develops and provides for generations of specifications (DOCSIS 1.0, DOCSIS 1.1, DOCSIS 2.0, DOCSIS 3.0, DOCSIS 3.1, etc.). At the current state of the market, specifications for DOCSIS 4.0 have been developed.

⁽²⁵⁾ For instance, fixed wireless access networks based on 5G technology, also potentially other wireless technologies that include fixed radio solutions, especially the next generation of Wi-Fi (Wi-Fi6).

⁽²⁶⁾ Satellite technology solutions are currently used in some cases in remote or isolated areas in situations where they can provide a suitable level of fixed broadband services. More advanced satellites that are able to significantly improve the quality of broadband services and deliver ultrafast speed are expected to become available in the future (including very high throughput satellites). Satellites also play a role in providing services to public authorities. There are several low earth orbit (LEO) satellite constellations under preparation that are expected to be able to lower the latency.

⁽²⁷⁾ All mobile broadband systems (2G, 3G, 4G and 5G) are based on the International Telecommunication Union's International Mobile Telecommunication (IMT) standards. IMT standards are specifications and requirements for high-speed mobile broadband service based on the technological progress in the relevant time frame. Mobile networks incorporate progressively the features and capabilities of new standards. In addition, the amount and type of spectrum used, with different propagation characteristics, have an important impact on the quality of service delivered. For instance, among the three pioneer bands identified for 5G services, it is currently estimated that the 700 MHz frequency band is more suitable for wide area and indoor coverage; 3,6 GHz (3,4-3,8 GHz) is characterised by high capacity but lower coverage than the 700 MHz band; the 26 GHz (24,25-27,5 GHz) is likely to be used to deploy hot-spots in small areas with very high demand (for example transport hubs, entertainment venues, industrial or retail sites or along major roads and railway tracks in rural areas) and will not be used to create wide area coverage. New mobile generations may also use frequency bands initially used by previous generations.

⁽²⁸⁾ Subsequent versions of 2G (so called 2G enhanced or 2.xG) were superior to 2G itself. Incremental upgrades over 3G (3.xG versions) had better performances compared to 3G. Also for 4G, the 4.5G cellular communication system is better than 4G in several aspects. 4.5G is the outcome of the evolution of LTE whose legacy is LTE-Advanced. The initial roll-out of 5G network will likely focus on enhanced mobile broadband services (one of the sets of use cases defined for 5G). 5G standalone networks are expected to provide significant improvements in speed and latency while supporting a greater density of connected devices compared to previous generations and make available new features such as network slicing that in turn will enable new sets of use cases for 5G.

⁽²⁹⁾ 5G non-standalone networks may use new equipment and 5G frequencies to deliver better quality of service but may still use 4G network elements.

⁽³⁰⁾ For instance, to date, coverage obligations attached to some spectrum bands require, depending on types of spectrum, a coverage of a certain percentage of the population or territory and minimum quality requirements in terms of speed and latency. Often, such coverage obligations are to be fulfilled within a period of up to 5 years from the assignment of the relevant spectrum, sometimes up to 7 years.

2.3.3. *Backhaul networks*

25. Backhaul networks are necessary inputs to sustain both fixed and mobile access networks. Backhaul networks can be based on copper, optical fibre, microwave and satellite solutions ⁽³¹⁾.

3. COMPATIBILITY ASSESSMENT UNDER ARTICLE 106(2) OF THE TREATY

26. In some cases, Member States may classify the provision of broadband services as a service of a general economic interest ('SGEI') under Article 106(2) of the Treaty ⁽³²⁾ and support the deployment of a network providing such services. Compensation for costs incurred to provide such a service of general economic interest does not amount to State aid if the four cumulative conditions of the Altmark judgment ⁽³³⁾ are met. The compensation for the provision of a service of general economic interest that constitutes aid will be assessed in accordance with the rules applicable to State aid in the form of public service compensation ('the SGEI package') ⁽³⁴⁾.
27. These Guidelines only illustrate the definition of a SGEI by applying the rules laid down in the SGEI package to broadband networks, taking into account sectoral characteristics.
28. On the definition of a genuine SGEI, the Commission has clarified that Member States cannot attach specific public service obligations to services that are already provided or can be provided satisfactorily and under conditions, such as price, objective quality characteristics, continuity and access to the service, consistent with the public interest, as defined by the Member State, by undertakings operating under normal market conditions ⁽³⁵⁾.
29. Applying this principle to the broadband sector, when assessing the absence of manifest error in the classification of an SGEI, the Commission takes into consideration the following elements:
- (a) the State aid intervention must address only areas where it can be demonstrated that private investors are not in a position to provide access to adequate broadband services. In line with Directive (EU) 2018/1972, the level of adequate broadband services is set by each Member State, in the light of national conditions and the minimum bandwidth enjoyed by the majority of consumers within a Member State in order to ensure the bandwidth necessary for an adequate level of social inclusion and participation in the digital economy and society in their territory. The adequate broadband services should be capable of delivering the bandwidth necessary for supporting at least the minimum set of services set out in Annex V to Directive (EU) 2018/1972. A Member State should establish the absence of adequate broadband services based on mapping and public consultation conducted

⁽³¹⁾ In the early generations of mobile networks, the backhaul from the radio base station to the mobile switching centre, was largely provided by point-to-point microwave connections. The deployment of LTE-Advanced and the introduction of 5G have led to higher backhaul requirements and an increasing use of optical fibre networks to connect base stations.

⁽³²⁾ According to case-law, undertakings entrusted with the operation of services of general economic interest must have been assigned that task by an act of a public authority. For instance, a SGEI may be entrusted to an undertaking by granting a public service concession; see judgment of 13 June 2000, *EPAC v Commission*, joined cases T-204/97 and T-270/97, EU:T:2000:148, paragraph 126 and judgment of 15 June 2005, *Fred Olsen v Commission*, T-17/02, EU:T:2005:218, paragraphs 186, 188-189.

⁽³³⁾ Judgment of 24 July 2003, *Altmark Trans and Regierungspräsidium Magdeburg*, C-280/00, EU:C:2003:415, paragraphs 87 to 95.

⁽³⁴⁾ The SGEI package includes the Commission communication on the application of the European Union State aid rules to compensation granted for the provision of services of general economic interest (OJ C 8, 11.1.2012, p. 4), the Commission Decision of 20 December 2011 on the application of Article 106(2) of the Treaty on the Functioning of the European Union to State aid in the form of public service compensation granted to certain undertakings entrusted with the operation of services of general economic interest (OJ L 7, 11.1.2012, p. 3), the Commission communication on a European Union framework for State aid in the form of public service compensation (OJ C 8, 11.1.2012, p. 15) and Commission Regulation (EU) No 360/2012 of 25 April 2012 on the application of Articles 107 and 108 of the Treaty on the Functioning of the European Union to *de minimis* aid granted to undertakings providing services of general economic interest (OJ L 114, 26.4.2012, p. 8). The Commission started in June 2019 to evaluate State aid rules for health and social services of general economic interest (SGEI) and Regulation (EU) No 360/2012.

⁽³⁵⁾ Paragraph 13 of the Commission communication on a European Union framework for State aid in the form of public service compensation (OJ C 8, 11.1.2012, p. 15).

in accordance with Sections 5.2.2.4.1 and 5.2.2.4.2 ⁽³⁶⁾. The Commission considers that in areas where private investors have already invested or plan to invest in a broadband network providing access to adequate broadband services, setting up a parallel State-funded broadband network cannot be classified as a SGEI within the meaning of Article 106(2) of the Treaty ⁽³⁷⁾;

- (b) the network must offer universal and affordable, in the light of specific national conditions, broadband services ⁽³⁸⁾ for all premises in the target area. Support for connecting businesses only would not be sufficient ⁽³⁹⁾;
- (c) the network must be technologically neutral;
- (d) the SGEI provider should offer open wholesale access in accordance with Section 5.2.4.4 on a non-discriminatory basis ⁽⁴⁰⁾;
- (e) where the provider of the SGEI is also a vertically integrated undertaking, Member States should implement adequate safeguards ⁽⁴¹⁾ to avoid any conflict of interest, undue discrimination and any other hidden indirect advantages ⁽⁴²⁾.

4. COMPATIBILITY ASSESSMENT UNDER ARTICLE 107(3), POINT (C), OF THE TREATY

- 30. The Commission will consider State aid for the deployment or take-up of broadband networks and services compatible with the internal market pursuant to Article 107(3), point (c), of the Treaty only if the aid contributes to the development of certain economic activities or of certain economic areas (first condition), and if such aid does not adversely affect trading conditions to an extent contrary to the common interest (second condition).
- 31. In its compatibility assessment, the Commission will examine the following two aspects:
 - (a) under the first condition, the Commission will examine whether the aid is intended to facilitate the development of certain economic activities, and in particular:
 - (i) the economic activity facilitated by the aid;
 - (ii) the incentive effect of the aid, namely the potential of the aid to change the behaviour of the undertakings concerned in such a way that they carry out an additional activity, which they would not have carried out without the aid or would have carried out in a restricted or different manner or location;

⁽³⁶⁾ For the implementation of universal service obligations, the provisions of Directive (EU) 2018/1972 apply.

⁽³⁷⁾ See paragraph 49 of the Commission communication on the application of the European Union State aid rules to compensation granted for the provision of services of general economic interest. See also paragraph 154 of the judgment of 16 September 2013, *Colt Télécommunications France v Commission*, T-79/10, EU:T:2013:463, and Commission Decision C(2016) 7005 final of 7 November 2016, case SA.37183 (2015/NN) – France – Plan France Très Haut Débit, recital 263 (OJ C 68, 3.3.2017, p. 1).

⁽³⁸⁾ See Articles 84, 85 and 86 of Directive (EU) 2018/1972.

⁽³⁹⁾ See paragraph 50 of the Commission communication on the application of the European Union State aid rules to compensation granted for the provision of services of general economic interest. See also Commission Decision C(2006) 436 final of 8 March 2006, case N284/05 – Ireland – Regional broadband Programme: *Metropolitan Area Networks* ('MANs'), phases II and III (OJ C 207, 30.8.2006, p. 3), and Commission Decision C(2007) 3235 final of 10 July 2007, case N890/06 – France – Aide du Sicoval pour un réseau de très haut débit (OJ C 218, 18.9.2007, p. 1).

⁽⁴⁰⁾ For the implementation of universal service obligations, the provisions of Directive (EU) 2018/1972 apply.

⁽⁴¹⁾ Such safeguards may include, depending on the characteristics of each case, limiting the provision of wholesale-only services, an obligation of accounting separation, and may also include the setting up of a structurally and legally separate entity from the vertically integrated undertaking. Such entity should have sole responsibility for complying with and delivering the SGEI mission assigned to it. Indeed, once a broadband network providing universal broadband services has been deployed, undertakings providing retail broadband services that operate on market terms are normally able to provide those services to end users at a competitive price. See Commission Decision C(2016) 7005 final of 7 November 2016, case SA.37183 (2015/NN) – France – Plan France Très Haut Débit (OJ C 68, 3.3.2017, p. 1).

⁽⁴²⁾ For the implementation of universal service obligations, the provisions of Directive (EU) 2018/1972 apply.

- (iii) the existence of a breach of any provision of Union law in relation to the measure at stake;
- (b) under the second condition, the Commission will weigh up the positive effects of the planned aid and the negative effects that the aid may have on the internal market, in terms of distortions of competition and adverse effects on trade caused by the aid, and will therefore examine:
 - (i) the positive effects of the aid;
 - (ii) whether the aid is needed and targeted to address a situation where it can bring about a material improvement that the market cannot deliver itself, for example, by remedying a market failure or addressing an equity or cohesion concern;
 - (iii) whether the aid is an appropriate policy instrument to meet its objective;
 - (iv) whether the aid is proportionate and limited to the minimum necessary to induce the additional investment or activity in the area concerned;
 - (v) whether the aid is transparent, namely whether Member States, stakeholders, the public and the Commission have easy access to information on the aid awarded;
 - (vi) the negative effects of the aid on competition and trade between Member States.
- 32. As a final step, the Commission will balance the identified negative effects of the aid on the internal market with its positive effects on the supported economic activities.
- 33. The steps in the Commission's assessment of aid for the deployment and take-up of broadband networks and services are set out in further detail in Sections 5 to 8.

5. AID FOR THE DEPLOYMENT OF BROADBAND NETWORKS

- 34. The Commission considers the market for fixed broadband services as separate from the market for mobile broadband services ⁽⁴³⁾. The rules for assessing aid may therefore differ, depending on the market concerned ⁽⁴⁴⁾.

5.1. First condition: facilitation of the development of an economic activity

5.1.1. Networks as facilitators of economic activities

- 35. Member States must identify the economic activities that will be facilitated as a result of the aid, such as the deployment of fixed networks providing performant fixed broadband services or the deployment of mobile networks providing voice and high-performance broadband services. They must also explain how the development of those activities is supported.
- 36. Aid for the deployment of fixed networks and aid for the deployment of mobile networks can facilitate the development of many economic activities by increasing connectivity and access to the broadband networks and services for the public, businesses and public administrations. Such aid can facilitate the development of economic activities in areas where such activities are either not present or only ensured at a level that does not adequately fulfil end-users' needs.

5.1.2. Incentive effect

- 37. Aid can only be considered as contributing to the development of an economic activity if it has an incentive effect.
- 38. Aid has an incentive effect if it incentivises the beneficiary to change its behaviour towards the development of a certain economic activity supported by the aid that it would not have carried out within the same time frame or would only have carried out in a limited or different manner or location, if the aid was not granted.

⁽⁴³⁾ Where deployment costs of a fixed network are very high, a high-performance mobile network may provide an alternative to a fixed network to a certain extent, depending on specific circumstances. However, there remain significant qualitative differences between the two technologies. Unlike fixed networks, mobile networks allow end users to move while communicating (for instance in a car). However, fixed networks offer a higher degree of stability in particular for data transmission. For the time being, end users typically use both technologies as complements, not substitutes.

⁽⁴⁴⁾ Member States have the possibility to establish a single State aid measure supporting the deployment of a combination of different types of networks (fixed access networks, mobile access networks and backhaul networks) subject to compliance with the rules that apply for each type of network.

39. The aid must not finance the costs of an activity that an undertaking would carry out in any event. It must not compensate the normal business risk of an economic activity ⁽⁴⁵⁾.
40. Proving an incentive effect of aid for the deployment of fixed or mobile networks means checking, through mapping and public consultation in accordance with Sections 5.2.2.4.1 and 5.2.2.4.2, whether stakeholders have invested or intend to invest in, respectively, fixed or mobile networks in the target areas within the relevant time horizon. If an equivalent investment could be made within the same time frame in the area without the aid, the aid can be considered to lack an incentive effect. For instance, where an undertaking is subject to legal obligations, such as coverage and quality of service obligations attached to the rights of use of certain radio spectrum for mobile deployments, State aid cannot be used to fulfil such obligations as it is unlikely to have an incentive effect, and thus unlikely to be compatible with the internal market. State aid may, however, be considered compatible where and to the extent necessary to provide a quality of service going beyond the requirements resulting from such obligations.

5.1.3. **Compliance with other provisions of Union law**

41. If a State aid, the conditions attached to it (including its financing method where that method forms an integral part of the aid) or the activity it finances entail a violation of a provision or a general principle of Union law, the aid cannot be declared compatible with the internal market ⁽⁴⁶⁾. This may be the case where the award of aid is made dependent, directly or indirectly, on the origin of products or equipment, such as a requirement for the beneficiary to purchase domestically produced products.

5.2. **Second condition: the aid must not unduly affect trading conditions to an extent contrary to the common interest**

5.2.1. **Positive effects of the aid**

42. Member States must describe whether and, if so, how the aid will bring about positive effects.
43. Member States may decide to design State interventions that contribute to reducing the digital divide. They may choose to intervene to correct social or regional inequalities, or to achieve equity objectives, that is to say, as a way of improving access to an essential means of communication and participation in society, thereby improving social and territorial cohesion. Furthermore, Member States may decide to design State interventions that also contribute to the achievement of objectives of Union digital policy, foster the achievement of Union Green Deal objectives and promote sustainable green investments across all sectors.

5.2.2. **Necessity for State intervention**

44. State aid must be targeted towards situations where aid can bring about a material improvement that the market alone cannot deliver.
45. A State intervention may be necessary if markets, without public intervention, fail to deliver an efficient outcome for society. This may arise, for instance, when certain investments are not being carried out even though the benefit for society outweighs their cost ⁽⁴⁷⁾. In such cases, granting State aid may produce positive effects, and overall efficiency may be improved by adjusting the economic incentives for stakeholders.
46. In the broadband sector, one form of market failure may relate to positive externalities that are not internalised by market operators. For example, while fixed and mobile networks are key enablers for the provision of additional services and for innovation, the overall benefits are likely to be higher than the economic benefits they generate for the networks' investors, especially in remote regions or low-population-density or unpopulated areas. The market may therefore generate insufficient private investment in fixed and mobile networks, in particular in certain areas.

⁽⁴⁵⁾ See judgment of 13 June 2013, *HGA and others v Commission*, C-630/11 P to C-633/11 P, EU:C:2013:387, paragraph 104.

⁽⁴⁶⁾ Judgment of 22 September 2020, *Austria v Commission*, C-594/18 P, EU:C:2020:742, paragraph 44.

⁽⁴⁷⁾ However, the fact that a specific company may not be capable of carrying out a project without aid does not mean that there is a market failure. For instance, a company's decision not to invest in a project with low profitability may not be an indication of a market failure, but rather of a market that functions well.

47. Due to economies of density, the deployment of broadband networks is generally more profitable where potential demand is higher and concentrated, that is to say, in densely populated areas. Because of the high fixed costs of investment, unit costs increase significantly as population densities drop. Therefore, when deployed on market terms, broadband networks tend to profitably cover only part of the population. State aid can, under certain conditions, correct market failures, thereby improving the efficiency of markets.
48. A market failure may also exist if the existing or planned network(s) would provide end users with a suboptimal combination of service quality and price ⁽⁴⁸⁾. This may be the case where: (a) certain categories of users may not be provided with a satisfactory service; or (b) especially in the absence of regulated wholesale access tariffs, retail prices may be higher than those charged for the same services offered in more competitive but otherwise comparable areas or regions of the Member State.
49. However, if State aid for the deployment of fixed and mobile networks were to be used in areas where market operators would usually choose to invest or have already invested, this could significantly undermine the incentives for private investors to invest in the first place.
50. Furthermore, where markets provide efficient outcomes but these are deemed unsatisfactory from a cohesion policy point of view, State aid may be necessary to correct social or regional inequalities to obtain a more desirable, equitable market outcome. In such circumstances, a well-targeted State intervention in broadband may contribute to reducing the digital divide ⁽⁴⁹⁾.
51. The mere existence of market failures in a certain context is not sufficient to justify State intervention. State aid should only be directed at the market failure that remains unaddressed by other, less distortive policies and measures, for instance administrative measures or regulatory obligations on the effective and efficient use of radio spectrum, including coverage and quality of service obligations attached to rights of use for radio spectrum.
52. To further minimise the aid's possible distortive effects on competition, State interventions may be subject to a private investment protection period, of up to 7 years ⁽⁵⁰⁾.

5.2.2.1. *Existence of market failure as regards fixed access networks*

53. Aid should target areas where there is no fixed network in place or where none is credibly planned to be deployed within the relevant time horizon that could address end-users' needs.
54. At the current stage of market development and given identified end users' needs, a market failure may be present where the market does not and is not likely to provide end users with a download speed of at least 1 Gbps and an upload speed of at least 150 Mbps ⁽⁵¹⁾.
55. In assessing whether the market is likely to provide a download speed of at least 1 Gbps and an upload speed of at least 150 Mbps, credible plans to deploy such networks within the relevant time horizon should be considered (in accordance with Section 5.2.2.4.3).

⁽⁴⁸⁾ In such cases, the Commission will carefully examine whether the Member State can demonstrate clearly and with verifiable evidence that end users' needs are not met. This could be proven through consumer survey, independent studies etc.

⁽⁴⁹⁾ While there may be several reasons for a digital divide, the existence of adequate broadband networks is a prerequisite for enabling connectivity and closing the gap. The degree of urbanisation is an important factor for access to and use of information and communications technologies. Internet penetration may remain lower in low-populated areas throughout the Union.

⁽⁵⁰⁾ The length of any private investment protection period would depend on the specificities of the protected networks, such as the underlying network technologies, the date when the deployment of the network was completed etc.

⁽⁵¹⁾ While speeds are currently the most relevant quality of service parameters, other parameters (such as latency) may become relevant for certain end users. Such parameters may be taken into account to determine the existence of a market failure.

56. Consequently, the Commission considers that no market failure is present in areas in which at least one fixed network providing a download speed of at least 1 Gbps and an upload speed of at least 150 Mbps is present or credibly planned or where the present network(s) can be upgraded to provide a download speed of at least 1 Gbps and an upload speed of at least 150 Mbps. A network is considered to be upgradable to such speeds if it can provide such performance on the basis of a marginal investment, such as an upgrade of active components.
57. State intervention to deploy an alternative network in the areas described in paragraph 56 could distort market dynamics. Therefore, the Commission will likely take a negative view on State aid for the deployment of an additional network in such areas.
58. In areas in which at least two independent fixed ultrafast networks are present or credibly planned, broadband services are typically provided under competitive conditions (infrastructure-based competition). Thus, it is likely that one or more such networks will evolve to provide a download speed of at least 1 Gbps and an upload speed of at least 150 Mbps, without the need for a State intervention.
59. However, the likelihood that networks in the areas described in paragraph 58 will evolve towards providing a download speed of at least 1 Gbps and an upload speed of at least 150 Mbps may also depend on the amount of investment needed to deploy networks delivering those speeds, considering the current stage of technological development. As a consequence, in those areas:
- (a) if none of the existing or credibly planned networks provides a download speed of at least 300 Mbps ⁽⁵²⁾, it is unlikely that they will evolve towards providing a download speed of at least 1 Gbps and an upload speed of at least 150 Mbps. Therefore, a State intervention may be allowed, provided that all compatibility criteria set out in these Guidelines are met;
 - (b) if at least one of the existing or credibly planned networks provides a download speed of at least 300 Mbps but does not provide a download speed of at least 500 Mbps ⁽⁵³⁾, the Commission will carry out a more detailed analysis to assess whether at least one of the existing or credibly planned network(s) will evolve towards providing 1 Gbps download and 150 Mbps upload speeds and whether a State intervention is necessary. Unless the Member State demonstrates that (i) based on mapping and public consultation, a market failure persists in the identified target areas as no networks will evolve towards providing a download speed of at least 1 Gbps and an upload speed of at least 150 Mbps; and (ii) the envisaged State intervention meets all compatibility criteria set out in these Guidelines, the Commission will likely take a negative view of such a State intervention;
 - (c) if at least one of the existing or credibly planned networks provides a download speed of at least 500 Mbps, it is likely that at least one of the existing or credibly planned networks will evolve towards providing a download speed of at least 1 Gbps and an upload speed of at least 150 Mbps. Therefore, State aid is generally unnecessary and the Commission will likely take a negative view of such a State intervention;
 - (d) the Member State may reassess the situation and notify a State intervention for approval after 5 years from the announcement date ⁽⁵⁴⁾ of State interventions under points (b) and (c). The 5-year period aims to offer an opportunity to investors to start deployment of privately-financed networks providing a download speed up at least 1 Gbps and an upload speed of at least 150 Mbps. Such a notification should be based on a new mapping and public consultation showing that a market failure persists and has to demonstrate that the envisaged State intervention meets all compatibility criteria set out in these Guidelines.

⁽⁵²⁾ As an additional safeguard, Member States may also verify that such speed is or will be actually reflected as the minimum download speed, within the meaning of Article 4(1), point (d), of Regulation (EU) 2015/2120 of the European Parliament and of the Council of 25 November 2015 laying down measures concerning open internet access and amending Directive 2002/22/EC and Regulation (EU) No 531/2012 (OJ L 310, 26.11.2015, p. 1), in at least one contract available to consumers.

⁽⁵³⁾ See footnote 48.

⁽⁵⁴⁾ Member States must announce the intention to intervene by publishing the list of target areas, the quality of services to be provided at least in terms of download and upload speeds and the thresholds for intervention at least in terms of download and upload speeds of the services that may be overbuilt by the measure. That information must be made available on a publicly accessible website at the level of the target area and at national level.

5.2.2.2. *Existence of market failure as regards mobile access networks*

60. The Commission considers that a market failure exists in areas where there is no mobile network, in place or credibly planned to be deployed within the relevant time horizon, which can address end-users' needs ⁽⁵⁵⁾.
61. Present and future communications applications increasingly rely on performant mobile networks that are available on a wide geographical basis ⁽⁵⁶⁾. End users have a need to communicate and access information while on the move. Over time, new economic activities are expected to develop that require seamless online access to performant mobile services. To accompany this change, mobile networks are expected to evolve to provide increasingly better connectivity. In certain circumstances, a lack of, or insufficient mobile connectivity may be detrimental for certain economic activities, such as industry, agriculture, tourism or connected mobility. It may also pose a risk for the public's safety ⁽⁵⁷⁾. This may particularly affect remote regions or low-population-density or unpopulated areas.
62. In an area where there is already at least one mobile network in place or credibly planned to be deployed within the relevant time horizon, which can address end-users' needs, State aid for the deployment of an additional mobile network could unduly distort market dynamics.
63. State aid for the deployment of a mobile network in the areas referred to in paragraph 62 may be considered necessary when it is demonstrated that both the following conditions are fulfilled: (a) the existing or credibly planned mobile network does not provide end users with sufficient quality of services to satisfy their evolving needs; and (b) the State intervention will provide such quality of services, thus bringing about a material improvement that the market cannot deliver ⁽⁵⁸⁾.
64. A State intervention may be necessary in certain circumstances to address specific market failures related to identified use cases even in the presence of a 4G or a 5G mobile network, where that network does not and is not likely to provide end users with sufficient quality of services to satisfy their evolving needs. Such use cases that relate to new economic activities and services may require: (a) seamless online access (for instance for connected and automated mobility along transport paths); (b) certain minimum speeds and capacity; (c) other specific characteristics such as lower latency, network virtualisation or the capacity to connect multiple terminals for industry or agriculture.
65. As a matter of principle, even in the presence of a market failure, State aid cannot be granted to and cannot be used for the fulfilment of legal obligations, such as obligations linked to the rights to use spectrum. However, State aid may be granted where and to the extent necessary to provide an additional quality of service that is required to meet end users' demonstrated needs and that goes beyond what is already required to comply with such legal obligations. Such aid may be granted insofar as necessary to cover only the additional costs needed to ensure the increased quality of service.
66. Where, in a given area, there is or there will be, within the relevant time horizon, at least one mobile network that can satisfy the end users' evolving needs (see paragraphs 61, 63 and 64), granting State aid for an additional mobile network with equivalent capabilities would, in principle, lead to an unacceptable distortion of competition, and crowd out private investments. The Commission will likely take a negative view of such State interventions.

⁽⁵⁵⁾ See, for instance, Commission Decision C(2021) 3492 final of 21 May 2021, case SA.58099 (2021/N) – Germany – Mobile communications Mecklenburg-Western Pomerania (OJ C 260, 2.7.2021, p. 1).

⁽⁵⁶⁾ For instance, the Gigabit communication refers to certain applications for the automotive, transport, manufacturing and health sectors as well as for next generation safety and emergency services (for instance connected and automated driving, remote surgery, precision farming).

⁽⁵⁷⁾ For instance, Article 109 of Directive (EU) 2018/1972 provides for the obligation of electronic communications operators to make caller location information available as soon as the call reaches the authority handling the emergency call. It is also mandatory to make network-based and the more accurate handset-derived location information available to the most appropriate public safety answering point.

⁽⁵⁸⁾ See, for instance, Commission Decision C(2020) 8939 final of 16 December 2020, case SA.54684 – Germany – High-capacity mobile infrastructure roll-out in Brandenburg (OJ C 60, 19.2.2021, p. 2); and Commission Decision C(2021) 1532 final of 10 March 2021, case SA.56426 – Germany – High-performance mobile infrastructure roll-out in Lower Saxony (OJ C 144, 23.4.2021, p. 2); Commission Decision C(2021) 3565 final of 25 May 2021, case SA.59574 – Germany – Deployment of high-performance mobile infrastructure in Germany (OJ C 410, 8.10.2021, p. 1).

5.2.2.3. *Existence of market failure as regards backhaul networks*

67. Backhaul networks are a prerequisite for the deployment of access networks. Backhaul networks have the potential to stimulate competition in the access areas to the benefit of all access networks and technologies. A performant backhaul network may stimulate private investments to connect end users, provided that it ensures wholesale access on open, transparent and non-discriminatory conditions for all access seekers and technologies. In the absence of private investments, State aid for the deployment of backhaul networks may be necessary to foster competition and investments at the access level as it enables access seekers to roll out access networks and offer connectivity services to end users.
68. As backhaul networks transport the traffic of various fixed or mobile access networks, those networks require a significantly higher transmission capacity than individual access networks. Backhaul networks need to cater for significant increases in the capacity required over their lifetime. This is due to the needs of end users and the ongoing rapid upgrade of fixed or mobile access networks with increasing needs for improved data transmission and increased performances (including for new mobile generations). In order to avoid a backhaul network becoming a bottleneck, it may be necessary to increase its capacity to accompany the deployment of performant fixed or mobile access networks. A market failure may thus be present where the existing or planned backhaul capacity cannot cope with the expected development of corresponding fixed or mobile access networks based on current and future end-users' needs. At the current stage of technological development, the increase in demand for capacity can usually be addressed by backhaul networks based on optical fibre or on other technologies that can provide the same level of performance and reliability as fibre-based backhaul networks. A market failure may therefore exist where there is no backhaul network or the existing or credibly planned network is not based on fibre or on other technologies that can provide the same level of performance and reliability as fibre.
69. Irrespective of the underlying technology of the existing backhaul network, a market failure may be present if that backhaul network provides a suboptimal combination of service quality and prices. For instance, a Member State may demonstrate that access conditions over the existing backhaul network could prevent the deployment of new or more performant fixed or mobile access networks because certain categories of access seekers are not adequately served⁽⁵⁹⁾ or because the wholesale access prices may be higher than those charged for the same services in more competitive but otherwise comparable areas of the Member State and the problem could not be solved through sector regulation⁽⁶⁰⁾.

5.2.2.4. *Instruments to determine the necessity for State intervention*

70. To identify the need for State intervention in a given area, Member States must verify on the basis of a detailed mapping and public consultation, in accordance with Sections 5.2.2.4.1 and 5.2.2.4.2, the performances of fixed access networks, mobile access networks or backhaul networks that exist or are credibly planned to be deployed in the target area in the relevant time horizon.
71. Member States have significant discretion to set the target areas. However, they are encouraged to take into account economic, geographical and social conditions when determining those areas.

5.2.2.4.1. *Detailed mapping and analysis of coverage*

72. Through a detailed mapping, Member States must identify the geographic areas (target areas) that will be eligible under the State aid intervention, based on an objective representation of the performances of the networks that exist or are credibly planned in a certain area.

⁽⁵⁹⁾ This may be the case where the architecture of the existing backhaul network is not in line with backhaul users' needs in terms of capacity or dimensioning.

⁽⁶⁰⁾ For instance, Croatia proposed a State intervention in its national backhaul market that was characterised by capacity constraints, which led to high prices on the downstream market. The existing backhaul network operator was not willing to invest in a capacity increase. As the issue could not be solved by the national regulator, the Commission approved a State aid scheme for investment in fibre backhaul infrastructure. The Commission found that the dominant position had become a bottleneck which constituted a market failure. Commission Decision C(2017) 3657 final of 6 June 2017, case SA.41065 – National Programme for broadband aggregation infrastructure – Croatia (OJ C 237, 21.7.2017, p. 1). See also Commission Decision C(2016) 7005 final of 7 November 2016, case SA.37183 (2015/NN) – France – Plan France très haut débit (OJ C 68, 3.3.2017, p. 1) where the Commission approved State aid for the deployment of a fibre backhaul network in areas where there was no backhaul network as well as in areas where the existing backhaul network had insufficient capacities to meet expected needs at reasonable access prices and conditions.

73. As regards State aid supporting the deployment of fixed access networks or mobile access networks, the mapping must comply with both the following criteria:
- (a) the performances must be expressed at least in terms of download speeds, and, where relevant, upload speeds ⁽⁶¹⁾ that are or will be available to end users under peak-time conditions ⁽⁶²⁾; any bottleneck that could prevent achievement of those performances must be duly taken into account (concerning for instance backhaul);
 - (b) the mapping must be carried out: (i) for fixed wired networks at address level on the basis of premises passed; and (ii) for fixed wireless access networks and mobile networks at address level on the basis of premises passed or on the basis of a maximum 100 × 100 metre grids ⁽⁶³⁾.
74. Member States may take into account the best practices for applying the mapping methodologies described in Annex I.
75. As regards State aid supporting the deployment of backhaul networks, Member States must map performances of backhaul networks existing or credibly planned within the relevant time horizon. Where a network deployment includes, at the same time the deployment of an access network and of the necessary backhaul network to enable the functioning of the access network, a separate mapping of backhaul networks is not required.
76. Member States must make the methodology and the underlying technical criteria (for instance, utilisation factor and cell load) used to map the target area publicly available.
77. The consultation of the national regulatory authority (NRA) is recommended as set out in Section 5.2.4.6.

5.2.2.4.2. Public consultation

78. Member States must publish for consultation the main characteristics of the planned State intervention and the list of target areas identified through the mapping ⁽⁶⁴⁾. That information must be made available on a publicly accessible Internet: ⁽⁶⁵⁾ at regional and national level.
79. The public consultation must invite interested parties (a) to comment on the planned State intervention, its design and main characteristics; and (b) to submit substantiated information about the existing networks or networks credibly planned to be deployed in the target area within the relevant time horizon ⁽⁶⁶⁾.
80. When considering the prospective relevant time horizon, Member States must take into account all aspects that can be reasonably expected to impact the duration of the deployment of the new network (namely the time required for the selection procedure, possible legal actions and challenges, time to obtain rights of ways and permits, other obligations stemming from national legislation, availability of civil works capacity, etc.). If the deployment of the planned State-funded network (until its entry into operation) takes longer than estimated, a new mapping and public consultation are necessary.

⁽⁶¹⁾ Where the presence of the market failure cannot already be inferred from the data concerning download speed.

⁽⁶²⁾ The public authorities responsible for the State intervention may also map other performance criteria to characterise the performance of networks at peak-time conditions (such as latency, packet loss, packet error, jitter, service availability). Member States may choose to do so in order to better target the State intervention to address market failures and ensure an adequate step change.

⁽⁶³⁾ Smaller grids (such as 20 × 20 metre grids) are considered a good practice to ensure target areas are clearly identified.

⁽⁶⁴⁾ This must include: list of target areas based on the mapping, duration of the measure, budget, sources of public financing, identification of the relevant time horizon, eligibility criteria including quality of services to be provided (upload and download speeds), thresholds for intervention, planned wholesale access requirements and pricing or pricing methodology. A public consultation may also include questions to stakeholders about the wholesale access products they would like to see offered on any newly created State-funded network.

⁽⁶⁵⁾ Direct consultation of suppliers or other stakeholders does not fulfil the requirements of a public consultation which must ensure openness and transparency towards any interested parties, in the interest of legal certainty.

⁽⁶⁶⁾ The results of a public consultation are only valid for the relevant time horizon indicated in the public consultation. The implementation of the measure beyond that time requires at least new mapping and public consultation.

81. Irrespective of whether the Member State may have already collected information on future investment plans through mapping, the public consultation must always include the results of the most recent mapping. This is necessary in order to minimise possible undue distortions of competition as regards undertakings already providing networks or services in the target areas and those who already have credible investment plans for the relevant time horizon.
82. The public consultation must last at least 30 days. After the end of the public consultation, the Member State has to launch the competitive selection procedure or to start the implementation of the project concerned ⁽⁶⁷⁾ for direct investment models within 1 year. If the Member State does not launch the competitive selection procedure or the implementation of the State-funded project within that period, it must carry out a new public consultation before it can launch the competitive selection procedure or implement the State-funded project.
83. The consultation of the NRA on the results of the public consultation is recommended ⁽⁶⁸⁾.

5.2.2.4.3. Best practices: assessment of private investment plans in the public consultation

84. There is a risk that a mere 'expression of interest' in future private investment plans in the target area by a stakeholder in a public consultation could delay the deployment of broadband networks if that private investment does not subsequently take place while State intervention has been stalled.
85. To reduce the risk that State intervention is prevented on the basis of future investment plans that will not materialise, Member States may decide to ask the relevant stakeholders to provide evidence to demonstrate the credibility of their investment plans, within a time frame that is appropriate and proportionate to the level of information requested ⁽⁶⁹⁾. This evidence may include, for instance, a detailed deployment plan with milestones (for example, for every 6-month period), demonstrating that the investment will be completed within the relevant time horizon and will ensure similar performances as the planned State-funded network.
86. To assess the credibility of the declared performance and coverage, Member States may use the same criteria used to assess the performance of the existing networks, where reasonable and appropriate.
87. When assessing the credibility of future investment plans, Member States may take notably the following criteria into account:
 - (a) whether the stakeholder has submitted a project-related business plan, factoring in suitable criteria concerning, for example, time frame, budget, the location of premises targeted, quality of service to be provided, type of network and technology to deploy and take-up rate;
 - (b) whether the relevant stakeholder has submitted a credible high-level project plan that properly takes into account major project milestones, such as administrative procedures and permits (including rights of way, environmental permits, safety and security provisions), civil engineering works, the completion of the network, the start of operations and provision of services to end users;
 - (c) the suitability of the size of the company in the light of the size of the investment;
 - (d) the track record of the stakeholder in comparable projects;
 - (e) if necessary and appropriate, the geographical coordinates of key parts of the planned network (base stations, points of presence, etc.).
88. If a Member State considers that the private investment plans are credible, it may decide to invite the stakeholders concerned to sign commitment agreements, which could include obligations to report progress on their stated milestones.

⁽⁶⁷⁾ This includes individual aid grants under a State aid scheme.

⁽⁶⁸⁾ A similar mechanism is set out in Article 22 of Directive (EU) 2018/1972.

⁽⁶⁹⁾ Member States may include this request directly in the public consultation for efficiency. Alternatively, as part of the assessment of the results of the public consultation, Member States may request further information when certain plans provided by stakeholders may qualify as a mere 'expression of interest'.

89. It is the responsibility of the stakeholders concerned to provide meaningful information in accordance with the relevant Union ⁽⁷⁰⁾ or national rules.
90. The Member State should consult the NRA on the Member State's assessment of the credibility of the future investment plans ⁽⁷¹⁾.
91. The Member State should communicate the results of its assessment and the reasons on which it bases its conclusions to all stakeholders who submitted information about their private investment plans.

5.2.2.4.4. Best practices: *ex post* monitoring of the implementation of private investment plans

92. If the Member State considers that the private investment plans submitted are credible and consequently the corresponding area has been carved out from the scope of the State intervention, the Member State may decide to require the stakeholders who have submitted those plans to report regularly on the compliance with the milestones for the deployment of the network and for the provision of services.
93. If the Member State identifies deviations from the plan submitted which suggest that the project will not materialise or has sufficient reasons to doubt that the investment will be completed as declared, the Member State may decide to require the stakeholders concerned to provide further information demonstrating the continued credibility of the declared investment.
94. If the Member State has significant doubts as to whether the investment will be completed as declared, it may decide at any time during the relevant time horizon to include the areas concerned by the investment in a new public consultation, with a view to verifying their potential eligibility for State intervention.

5.2.3. **Appropriateness of the aid as a policy instrument**

95. The Member State must demonstrate that the aid is appropriate to address the identified market failure and to achieve the objectives pursued by the aid. State aid is not appropriate if the same outcome is achievable through other less distortive measures.
96. State aid is not the only policy instrument available to Member States to boost investment in the deployment of broadband networks. Member States can use other less distortive means, such as administrative and regulatory measures or market-based instruments.
97. In order for the aid to be appropriate, the State-funded fixed and mobile networks must provide significantly enhanced characteristics in comparison to existing networks. State-funded fixed and mobile networks should therefore ensure a step change. A step change is ensured if, as a result of the State intervention, the following conditions are fulfilled: (a) the deployment of the State-funded fixed or mobile network represents a significant new investment ⁽⁷²⁾; and (b) the State-funded network brings significant new capabilities to the market in terms of availability, capacity, speeds ⁽⁷³⁾ and competition of broadband services.
98. The performance of the State-funded network must be compared to the highest performance of the existing network(s). Credible investment plans must be taken into account for the assessment of the step change only if they would, on their own, provide similar performances to that of the planned State-funded network in the target areas within the relevant time horizon.

⁽⁷⁰⁾ For example in accordance with Article 29 of Directive (EU) 2018/1972.

⁽⁷¹⁾ A similar mechanism is set out in Article 22 of Directive (EU) 2018/1972.

⁽⁷²⁾ For instance, in the case of fixed networks, marginal investments related merely to the upgrade of the active components of the network should not be considered eligible for State aid. Similarly, although certain copper enhancing technologies (such as vectoring) could increase the capabilities of the existing networks, they may not require significant investments in new networks, hence should not be eligible for State aid. For mobile networks, in certain circumstances Member States may demonstrate that investments in active equipment may play an important role and that public support may be justified if the investment does not consist of merely incremental upgrades but constitutes an integral part of a significant new investment in the network, provided that all compatibility conditions are complied with. See for instance Commission Decision C(2021) 9538 of 10 January 2022, case SA.57216 Mobile coverage in rural areas in Galicia (OJ C 46, 28.1.2022, p. 1).

⁽⁷³⁾ The subsidised network must provide services at the speed needed to fulfil the step change requirement. However, in addition to the speed needed to fulfil the step change requirement operators of a subsidised network may also offer services of a lower quality.

5.2.3.1. Step change – Fixed access networks

99. As regards State aid to fixed access networks, the presence of a step change is assessed based on a distinction between the types of target areas, depending on the presence of fixed ultrafast networks.

5.2.3.1.1. White and grey areas

100. White areas are areas where no fixed ultrafast network is present or credibly planned in the relevant time horizon.

101. Grey areas are areas where only one fixed ultrafast network is present or credibly planned in the relevant time horizon.

102. In white and grey areas, to achieve a step change, State intervention must both:

- (a) at least triple the download speed compared to the existing network;
- (b) represent a significant new infrastructure investment bringing significant new capabilities to the market ⁽⁷⁴⁾.

5.2.3.1.2. Mixed areas (white and grey)

103. In principle, the planned intervention should be designed so that the entire target area is either white or grey.

104. However, for reasons of efficiency, when it is not justified to dissociate white and grey areas, Member States may select target areas that are partly white and partly grey. In such areas, where some end users are already served by one fixed ultrafast network (or will be in the relevant time horizon), the Member State must ensure that the State intervention does not lead to an undue distortion of competition as regards the existing network.

105. An appropriate solution may consist of allowing a limited overbuilding of the existing fixed ultrafast network that connects end users in the grey area that is part of the mixed area. In such situations, the entire target area may be treated as white for the purposes of assessing the State intervention, provided that the Member State demonstrates that the following conditions are fulfilled:

- (a) the overbuilding does not create undue distortions of competition, based on the results of a public consultation;
- (b) the overbuilding is limited to maximum 10 % of all premises in the target area;
- (c) the step change requirements set out in Section 5.2.3.1.1 for white areas are fulfilled and the State-funded network provides substantially better services than the ones available in the grey part of the mixed area. The step change requirements set out in Section 5.2.3.1.1 for grey areas do not have to be fulfilled.

106. The Commission will assess the appropriateness of interventions in mixed areas on a case-by-case basis.

5.2.3.1.3. Black areas

107. Black areas are areas where at least two fixed ultrafast networks are present or credibly planned in the relevant time horizon.

108. Provided that the State intervention complies with the conditions set out in Section 5.2.2.1, the State-funded network must satisfy all the following conditions:

- (a) at least triple the download speed compared to the existing network;
- (b) provide a download speed of at least 1 Gbps and an upload speed of at least 150 Mbps;
- (c) represent a significant new infrastructure investment bringing significant new capabilities to the market ⁽⁷⁵⁾.

⁽⁷⁴⁾ This is for example the case when the new network significantly extends the fibre from the core of the network toward the edge of the network, for instance: (i) the deployment of fibre to the base stations to support the deployment of fixed wireless access networks; (ii) the deployment of fibre to the cabinets where the cabinets were not previously connected to a fibre network; (iii) the increase (deepening) of the fibre in cable networks.

⁽⁷⁵⁾ See footnote 68.

5.2.3.2. Step change – Mobile access networks

109. A State-funded mobile network must ensure a step change in terms of mobile services' availability, capacity, speeds and competition that may foster the adoption of new innovative services ⁽⁷⁶⁾.
110. As indicated in Section 2.3.2, the transition to each new IMT standard is generally incremental. Between two full consecutive IMT standards, there are incremental hybrid systems, which are usually more performant than their predecessors. For instance, the 4G LTE cellular communication system surpassed 4G in several aspects and 5G standalone is more performant than 5G non-standalone. Similarly, each new IMT standard has provided new capabilities ⁽⁷⁷⁾. While all IMT standards provide mobile voice services, only the newest IMT standards can provide performant mobile broadband services, including lower latency and higher transmission capacities.
111. As providing new capabilities requires more capacity, new IMT standards require new frequencies. As frequencies are a scarce resource, their assignment in the Union for the provision of mobile services is carried out on the basis of an auction or other competitive selection procedure and is subject to fees. When a new IMT standard is implemented as a result of the spectrum assignment process, it can be expected that mobile networks using this technology will provide significant new capabilities compared to the existing mobile networks. Mobile service providers are only willing to accept significant upfront costs for obtaining new rights of use of spectrum supporting a new IMT standard if they expect that the new IMT standard will offer superior capabilities, which would give them a return on their investment over time. On that basis, the Commission has accepted that the additional features of 4G networks over previous generations amount to a step change ⁽⁷⁸⁾. Similarly, 5G networks, and in particular 5G standalone networks, generally have additional functional capabilities such as ultra-low latency, high reliability and the possibility to reserve part of the network for a particular use and guarantee a certain quality of service. Those features will allow 5G networks, and in particular 5G standalone networks, to support new services (for instance health-monitoring and emergency services, real-time control of factory machines, smart grids for renewable energy management, connected and automated mobility, precise fault detection and quick intervention), thereby ensuring a step change compared to previous mobile generations. Next-generation mobile technologies (such as 6G) are expected to provide more enhanced capabilities in the future.

5.2.3.3. Step change – Backhaul networks

112. A State-funded backhaul network must ensure a step change in comparison to the existing network(s). A step change is ensured if, as a result of the State intervention, the funded backhaul network represents a significant investment in backhaul infrastructure and adequately supports the increasing needs of fixed or mobile access networks. This can be the case where the State-funded backhaul network, in contrast to the existing one(s), is based on fibre or on other technologies that can provide the same level of performance as fibre. Where existing networks are based on fibre or on similarly performant technologies, a step change can be achieved, for instance, by an appropriate dimensioning of the backhaul capacity, which depends on the specific evolving situation in the target areas.
113. If a State intervention covers both backhaul and access (fixed or mobile) networks, the backhaul network must be dimensioned in a way that it can support the needs of the access networks.
114. The Member State should select the most suitable technologies, in accordance with the technological neutrality principle, taking into account the characteristics and needs of the target areas, in particular when fibre-based or similarly performant networks are not technically or economically viable.

⁽⁷⁶⁾ This may include providing new services that would not have been possible absent the State intervention, such as connected and automated mobility.

⁽⁷⁷⁾ See also footnote 27.

⁽⁷⁸⁾ See, for instance, Commission Decision C(2020) 8939 final of 16 December 2020, case SA.54684 – Germany – High-capacity mobile infrastructure roll-out in Brandenburg (OJ C 60, 19.2.2021, p. 2).

5.2.4. *Proportionality of the aid*

115. Member States must demonstrate that the aid is proportionate to the problem being tackled. They must essentially show that the same change in behaviour would not be obtained with less aid and fewer distortions. Aid is considered proportionate if the amount is limited to the minimum necessary and the potential distortions of competition are minimised, in accordance with the principles set out in this Section.

5.2.4.1. *Competitive selection procedure*

116. State aid is considered proportionate if its amount is limited to the minimum needed for the supported economic activity to occur.

117. Without prejudice to the applicable public procurement rules, the aid must be granted on the basis of an open, transparent and non-discriminatory competitive selection procedure, in line with the principles of public procurement ⁽⁷⁹⁾. The aid must also respect the principle of technological neutrality, as set out in Section 5.2.4.2.

118. State aid is deemed proportionate and limited to the minimum amount necessary if it is granted through a competitive selection procedure attracting a sufficient number of participants. If the number of participants or the number of eligible bids is not sufficient, the Member State must entrust an independent auditor with the assessment of the winning bid (including cost calculations).

119. Different procedures may be suitable depending on the circumstances. For instance, as regards interventions with a high technical complexity, Member States may choose to engage in a competitive dialogue procedure with potential bidders, aiming to ensure the most appropriate design of the intervention.

120. The Member State must ensure that the most economically advantageous offer ⁽⁸⁰⁾ is selected. For that purpose, the Member State must set objective, transparent and non-discriminatory qualitative award criteria and specify the relative weighting of each criterion in advance.

121. Qualitative award criteria may include, among others, the performance of the network (including its security), the geographical coverage, how future-proof the technological approach is, the impact of the proposed solution on competition (including wholesale access terms, conditions and pricing) ⁽⁸¹⁾, and the total cost of ownership ⁽⁸²⁾.

122. Member States may consider granting additional priority points for criteria pertaining to the climate and environmental performance of the network ⁽⁸³⁾, respectively as regards its climate neutrality characteristics, including its carbon footprint, and the impact of the network on the principle components of natural capital, that is to say air, water, land and biodiversity. Member States may also include obligations for the selected bidder to implement proportionate mitigating measures in case the network may negatively impact the environment.

⁽⁷⁹⁾ Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC (OJ L 94, 28.3.2014, p. 65), and Directive 2014/23/EU of the European Parliament and of the Council of 26 February 2014 on the award of concession contracts (OJ L 94, 28.3.2014, p. 1).

⁽⁸⁰⁾ In line with the public procurement principles.

⁽⁸¹⁾ For instance, network topologies allowing full and effective unbundling should in principle receive priority points.

⁽⁸²⁾ The total cost of ownership (TCO) is considered, for example, by companies when they are looking to invest in assets. TCO includes the initial investment as well as all direct and indirect costs over the long term. While the amount of initial investment can be easily determined, companies most often seek to analyse all potential costs which they will incur to manage and maintain the asset during its lifespan, which can significantly influence the decision to invest.

⁽⁸³⁾ For instance, of the energy consumption or the life-cycle of the investment and thus use of the Do No Significant Harm criteria as introduced in Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088 (OJ L 198, 22.6.2020, p. 13).

123. Where the aid is granted without a competitive selection procedure, to a public authority that deploys and manages a broadband network at wholesale level ⁽⁸⁴⁾ directly, or through an in-house entity (direct investment model), the Member State must similarly justify its choice of network and technological solution ⁽⁸⁵⁾.
124. Any concession or other entrustment by such a public authority or in-house entity to a third party to design, build or operate the network must be allocated through an open, transparent and non-discriminatory competitive selection procedure. The procedure must be in line with the principles of public procurement, be based on the most economically advantageous offer and respect the principle of technological neutrality, without prejudice to the applicable public procurement rules.

5.2.4.2. *Technological neutrality*

125. The technological neutrality principle requires that State intervention must not favour or exclude any particular technology, both in the selection of beneficiaries and in the provision of wholesale access. As different technological solutions exist, the tender should not favour or exclude any particular technology or network platform. Bidders should be entitled to propose the provision of the required services using or combining whatever technology they deem most suitable. This is without prejudice to the possibility for Member States to determine the desired performance, including the energy efficiency of the networks, before the procedure and to grant priority points to the most suitable technological solution or mix of technology solutions based on objective, transparent and non-discriminatory criteria, in accordance with Section 5.2.4.1. A State-funded network must enable access under fair and non-discriminatory conditions to all access seekers irrespective of the technology used.

5.2.4.3. *Use of existing infrastructure*

126. The use of existing infrastructure is one of the main factors that can contribute to reducing the cost of deployment of a new broadband network and limiting the impact on the environment.
127. Member States should encourage undertakings willing to participate in a competitive selection procedure to use any available existing infrastructure. Member States should also encourage these undertakings to provide detailed information on the existing infrastructures that they own or control ⁽⁸⁶⁾ in the planned intervention area. That information should be provided in due time to be taken into account when preparing the bids. When proportionate, taking into account among other factors the size of the intervention area, readiness of the information and available time, Member States should make the provision of that information a condition for participation in the selection procedure ⁽⁸⁷⁾. The information may include, in particular: (a) location and route of the infrastructure; (b) the type and current use of the infrastructure; (c) a contact point and (d) where available ⁽⁸⁸⁾, the terms and conditions for its use.

⁽⁸⁴⁾ The aid beneficiary may be allowed to provide retail services as a 'retailer of last resort' where the market does not ensure the provision of such services. See Commission Decision C(2019) 8069 final of 15 November 2019, case SA.54472 (2019/N) – Ireland – National Broadband Plan (OJ C 7, 10.1.2020, p. 1).

⁽⁸⁵⁾ See Commission Decision C(2018) 6613 final of 12 October 2018, case SA.49614 (2018/N) – Lithuania – Development of Next Generation Access Infrastructure – RAIN 3 (OJ C 424, 23.11.2018, p. 8); Commission Decision C(2016) 3931 final of 30 June 2016, case SA.41647 – Italy – Strategia Banda Ultralarga (OJ C 258, 15.7.2016, p. 4); Commission Decision C(2019) 6098 final of 20 August 2019, case SA.52224 – Austria – Broadband project in Carinthia (OJ C 381, 8.11.2019, p. 7).

⁽⁸⁶⁾ Infrastructure to which they have the right to grant access to third parties.

⁽⁸⁷⁾ See Commission Decision in case SA. 40720 (2016/N) National Broadband Scheme for the UK for 2016-2020 (OJ C 323, 2.9.2016, p. 2), recitals 115 and 116, where the UK authorities required all bidders to sign up to a Code of Conduct. The Code of Conduct included standards for: (i) the level of detail of information that should be provided; (ii) the timeframes in which the information is to be provided; (iii) the acceptable terms of a non-disclosure agreement; and (iv) the obligations to make available the infrastructure for use in other bids. Bidders not meeting the terms of the Code of Conduct would be excluded from the procurement.

⁽⁸⁸⁾ This may notably be the case when such term and conditions already exist as a result of regulatory obligations imposed by national regulatory authorities or other competent authorities under Directive (EU) 2018/1972, when access is foreseen in a previous State Aid Decision or when a commercial wholesale offer is available.

128. Member States must make accessible all information at their disposal ⁽⁸⁹⁾ on existing infrastructure that could be used for rolling out broadband networks in the intervention area. Member states are encouraged to rely on the Single Information Point set up pursuant to Article 4(2) of Directive 2014/61/EU.

5.2.4.4. Wholesale access

129. Effective wholesale access for third parties to the funded networks is an indispensable condition of any State aid measure. In particular, wholesale access enables third-party undertakings to compete with the selected bidder, thereby strengthening choice and competition in the areas covered by the measure. Wholesale access also avoids the creation of regional service monopolies. By enabling competition to develop in the target area, it also ensures the development of the market in that area in the longer term. That access is not contingent on any prior market analysis within the meaning of Chapter III of Directive (EU) 2018/1972. Nevertheless, the type of wholesale access obligations imposed on a State-funded network should take into account the portfolio of access obligations laid down under the sectoral rules. However, as aid beneficiaries are not just using their own resources but public funds to deploy the network, they should provide a wider range of wholesale access products than those imposed by NRAs on the undertakings having significant market power. Such wholesale access should be granted as early as possible before starting to provide the relevant services and, where the network operator also intends to provide retail services, at least 6 months before the launch of those retail services.
130. The State-funded network must offer effective access under fair and non-discriminatory conditions to undertakings. This may imply the upgrade and increased capacity of existing infrastructure, where necessary, and the deployment of sufficient new infrastructure (for instance, ducts large enough to cater for a sufficient number of networks, and different network topologies) ⁽⁹⁰⁾.
131. Member States must indicate the terms, conditions and prices for the wholesale access products in the documents of the competitive selection procedure and must publish that information on a comprehensive website, at national or regional level. The general public should be allowed to access the website without any restrictions, including prior users' registration.
132. In order to render the wholesale access effective and to enable the access seeker to provide its services, wholesale access must also be granted to parts of the network that have not been State funded or that may not have been deployed by the aid beneficiary ⁽⁹¹⁾.

5.2.4.4.1. Wholesale access terms and conditions

133. Effective wholesale access must be granted for at least 10 years for all active products except virtual unbundled local access (VULA).
134. Access based on VULA must be granted for a period of time equal to the lifespan of the infrastructure for which VULA is a substitute ⁽⁹²⁾.

⁽⁸⁹⁾ Access to this information may be limited according to the applicable rules. For instance, access to information concerning physical infrastructure under Directive 2014/61/EU may be limited for reasons of security and integrity of networks, national security, public health or safety, confidentiality or business secrets.

⁽⁹⁰⁾ This may include, depending on the type of intervention: adequately sized ducts, sufficient number of dark fibres, type and upgrade of poles, masts, towers, type and size of street cabinets to provide effective unbundling etc. See Commission Decision C(2016) 3208 final of 26 May 2016, case SA 40720 (2016/N) – United Kingdom – Broadband Delivery UK (OJ C 323, 2.9.2016, p. 2) and Commission Decision C(2019) 8069 final of 15 November 2019, case SA.54472 (2019/N) – Ireland – National Broadband Plan (OJ C 7, 10.1.2020, p. 1).

⁽⁹¹⁾ For example effective access implies that adequate wholesale access to active equipment is granted even if only infrastructure is financed.

⁽⁹²⁾ As in this particular case, VULA is a substitute for the physical unbundling of a new infrastructure, the same rules as for new infrastructure apply.

135. Access to new infrastructure (such as ducts, poles, cabinets or dark fibre) must be granted for the lifespan of the network element concerned ⁽⁹³⁾. If State aid is granted for new infrastructure, the infrastructure must be large enough to meet access seekers' current and evolving demand ⁽⁹⁴⁾. This is complementary and without prejudice to regulatory obligations that may be imposed by the NRA.
136. Member States must consult NRAs on wholesale access products, conditions and pricing. NRAs are encouraged to provide guidance, as set out in Section 5.2.4.6.
137. The same access conditions must apply to the entire State-funded network, including the parts of the network where existing infrastructure has been used. The access obligations must be enforced irrespective of any change in ownership, management or operation of the State-funded network.
138. If they use their own resources, the aid beneficiary or access seekers connecting to the State-funded network may decide to extend their networks into adjacent areas outside the target area. Access seekers may carry out such extensions on the basis of the wholesale access obligations. If they are not linked to the aid beneficiary, there is no limitation for such extensions into adjacent areas. An access seeker is deemed to be not linked to the aid beneficiary if they are not part of the same group and do not have participation in their respective undertakings. Extensions by the aid beneficiaries can be allowed subject to the following cumulative safeguards:
- (a) when carrying out the public consultation (see Section 5.2.2.4.2), the Member State must indicate that private extensions are permitted at a later stage and provide meaningful information regarding the potential coverage of such extensions;
 - (b) extensions into adjacent areas may only be carried out 2 years after the State-funded network enters into operation, where one of the following situation occurs:
 - (i) in the public consultation, stakeholders demonstrate that the planned extension would risk entering an adjacent area which is already served by at least two independent networks providing speeds comparable to those of the State-funded network;
 - (ii) there is at least one network in the adjacent area providing speeds comparable to those of the State-funded network which entered into operation less than 5 years before the State-funded network enters into operation ⁽⁹⁵⁾.
139. If the results of the public consultation show evidence of risks of other significant distortions of competition, extensions by the aid beneficiary must be prohibited.

5.2.4.4.2. Wholesale access products

5.2.4.4.2.1. Fixed access networks deployed in white areas

140. The State-funded network must provide at least bitstream access, access to dark fibre and access to infrastructure, including street cabinets, poles, masts, towers, and ducts.
141. In addition, Member States must ensure the State-funded network provides at least either physical unbundling or VULA. To be considered suitable as a wholesale access product, any VULA product must be approved in advance by the NRA or other competent authority.

⁽⁹³⁾ See Commission Decision C(2019) 8069 final of 15 November 2019, case SA.54472 (2019/N) – Ireland – National Broadband Plan (OJ C 7, 10.1.2020, p. 1). Whenever the aid recipient decides to upgrade or replace the infrastructure before the end of lifespan of the aided infrastructure, the aid recipient will have to continue to give access to the new infrastructure for the whole period foreseen for the original infrastructure.

⁽⁹⁴⁾ For instance and depending on the specificity of the network, where new ducts are built to host fibre, they should cater for at least three independent fibre cables each hosting several fibres and therefore able to serve several undertakings. Where existing infrastructure has capacity constraints and cannot provide access to at least three independent fibre cables, based on the principle first-come-first-served, the operator of the State-funded network should make available at least 50 % of the capacity (in particular dark fibres) to access seekers.

⁽⁹⁵⁾ These rules also apply in the case of connections to State-funded backhaul networks or in the case of State-funded mobile network which is subsequently used for the provision of fixed wireless access services in areas which are already covered by a fixed network.

5.2.4.4.2.2. Fixed access networks deployed in grey and black areas

142. The State-funded network must provide at least (a) the wholesale access products referred to in paragraph 140; and (b) physical unbundling.
143. Member States may consider it appropriate not to impose the provision of physical unbundling and require the provision of VULA instead. In that case, Member States must indicate their intention to grant a derogation from the obligation to provide physical unbundling and provide the reasons for this choice in the public consultation. Member States must demonstrate that replacing the provision of physical unbundling with the provision of VULA does not risk unduly distorting competition taking into account the result of the public consultation and the characteristics of the market and the area concerned ⁽⁹⁶⁾. On that basis, the Commission will assess whether providing VULA, instead of physical unbundling, ensures that the aid is proportionate.

5.2.4.4.2.3. Mobile access networks

144. The State-funded network must provide a reasonable set of wholesale access products, considering the characteristics of the market, for ensuring effective access to the subsidised network. This includes at least roaming, and access to poles, masts, towers and ducts. As soon as they become available, the State-funded network will have to provide the access products necessary to exploit the more advanced features ⁽⁹⁷⁾ of mobile networks, such as 5G and future generations of mobile networks ⁽⁹⁸⁾.

5.2.4.4.2.4. Backhaul networks

145. The State-funded network must ensure at least one active service and access to poles, masts, towers, ducts and dark fibre.
146. Member States must foresee the deployment of sufficient capacity for new infrastructure (for instance, ducts large enough to cater for deployment of fibre to accommodate the expected needs of all access seekers) if necessary to ensure effective access under fair and non-discriminatory conditions.

5.2.4.4.3. Wholesale access on the basis of reasonable demand

147. By way of exception to the conditions set in Section 5.2.4.4.2, Member States may limit the provision of certain wholesale access products to cases of reasonable demand from an access seeker, where the provision of such products would disproportionately increase investment costs without delivering significant benefits in terms of increased competition.
148. In order for the Commission to approve such an exception, the Member State must provide justification on the basis of the characteristics of that specific intervention. The justification should be based on well-reasoned and objective criteria, such as the low-population density of the areas concerned, the size of the target area or the size of the aid beneficiaries ⁽⁹⁹⁾. The Member State must demonstrate, for each access product that will not be provided, that the provision of that product would result in a disproportionate cost increase of the intervention, on the basis of detailed and objective cost calculations.

⁽⁹⁶⁾ Such characteristics may pertain to the applicable *ex ante* regulation in the electronic communications markets, the business model of the operators present on the market (wholesale-only or vertically integrated providers of broadband services), the size of the State aid intervention project, the use of physical unbundling in the Member State concerned, etc.

⁽⁹⁷⁾ Such as Multi-Operator-Access-Network (MORAN), Multi-Operator Core Network (MOCN), network slicing.

⁽⁹⁸⁾ When granting the aid, Member States must ensure that masts and towers are able to ensure that such access can be granted considering the current and evolving market structure.

⁽⁹⁹⁾ For instance, see Commission Decision C(2011) 7285 final of 19 October 2011, case N 330/2010 – France – Programme national 'Très Haut Débit' – Volet B (OJ C 364, 14.12.2011, p. 2) and Commission Decision C(2012) 8223 final of 20 November 2012, case SA.33671 (2012/N) – United Kingdom – National Broadband scheme for the UK – Broadband Delivery UK (OJ C 16, 19.1.2013, p. 2).

149. The access seeker's demand is considered reasonable if (a) the access seeker provides a business plan that justifies the development of the product on the State-funded network; and (b) no comparable access product is already offered in the same geographic area by another undertaking at equivalent prices to those in more densely populated areas ⁽¹⁰⁰⁾.

150. If an access request is reasonable, the additional cost of meeting the access request must be borne by the aid beneficiary.

5.2.4.4.4. Wholesale access pricing

151. When setting prices for the wholesale access products, Member States must ensure that the wholesale access price for each product is based on one of the following benchmarks and pricing principles:

- (a) the average published wholesale prices that prevail in other comparable and more competitive areas of the Member State;
- (b) the regulated prices already set or approved by the NRA for the markets and services concerned;
- (c) costs orientation or a methodology mandated in accordance with the sectoral regulatory framework.

152. The NRA must be consulted on wholesale access products and the terms and conditions for wholesale access, including prices and related disputes, as set out in Section 5.2.4.6.

5.2.4.4.5. Clawback

153. The aid amount for State interventions supporting the deployment of fixed and mobile network is often set on an *ex ante* basis in order to cover the expected funding gap over the lifespan of the aided infrastructure.

154. In that case, as future costs and revenues are generally uncertain, Member States should closely monitor implementation of each State-funded project ⁽¹⁰¹⁾ for the entire lifespan of the aided infrastructure and provide for a clawback mechanism. This mechanism makes it possible to properly consider information that the aid beneficiary was not able to factor into the original business plan when applying for State aid. Factors that may have an impact on the profitability of the project and that may be difficult, or even impossible, to establish *ex ante* with adequate accuracy are, for example: (a) the actual deployment costs of the network; (b) the actual revenue from the core services; (c) the actual take-up; and (d) the actual revenue from 'non-core' services ⁽¹⁰²⁾.

155. Member States must implement a clawback mechanism for the lifespan of the aided infrastructure if the aid amount of the project is above EUR 10 million. The Member States must set out the rules of that mechanism transparently and clearly in the competitive selection procedure's documentation.

156. A clawback is not necessary where the project is carried out by means of the direct investment model in which a publicly owned, wholesale-only network, is built and operated by a public authority with the sole purpose of granting fair and non-discriminatory access to all undertakings ⁽¹⁰³⁾.

⁽¹⁰⁰⁾ Other conditions may be accepted by the Commission as part of the proportionality analysis in the light of the characteristics of the case and the overall balancing exercise. See for example, Commission Decision C(2011) 7285 final of 19 October 2011, case N 330/2010 – France – Programme national 'Très Haut Débit' – Volet B (OJ C 364, 14.12.2011, p. 2) and Commission Decision C(2012) 8223 final of 20 November 2012, case SA.33671 (2012/N) – United Kingdom – National Broadband scheme for the UK – Broadband Delivery UK (OJ C 16, 19.1.2013, p. 2). If the conditions are fulfilled, access should be granted within a period which is customary for the particular market. In the case of conflict, the aid granting authority should ask the NRA or another competent national body for an advice.

⁽¹⁰¹⁾ This includes individual grants of aid under a State aid scheme.

⁽¹⁰²⁾ For instance, a clawback mechanism may help recover profits that are higher than reasonably anticipated, for instance due to: (i) higher than forecast take-up of broadband products resulting in additional profits and a smaller investment gap; and (ii) higher than forecast revenues from non-broadband products resulting in additional profits and a smaller investment gap (for instance revenue from new wholesale access products). See Commission Decision C(2016) 3208 final of 26 May 2016, case SA 40720 (2016/N) – United Kingdom – Broadband Delivery UK (OJ C 323, 2.9.2016, p. 2).

⁽¹⁰³⁾ A clawback mechanism may be necessary in other cases, such as certain public ownership models. See for instance Commission Decision C(2016) 3208 final of 26 May 2016, case SA 40720 (2016/N) – United Kingdom – Broadband Delivery UK (OJ C 323, 2.9.2016, p. 2).

157. As various factors may have a positive or a negative impact on the business plan of the aid beneficiary, the clawback mechanism should be designed in a way to consider and balance two objectives: (a) it should allow the Member State to recover amounts that exceed a reasonable profit ⁽¹⁰⁴⁾; (b) it should not endanger the incentives for undertakings to participate in a competitive selection procedure ⁽¹⁰⁵⁾ and to strive for cost efficiencies (efficiency gains) when rolling out the network. To achieve a good balance between the two objectives, Member States should introduce criteria to incentivise efficiency gains ⁽¹⁰⁶⁾.
158. The incentive amount must be set to a maximum of 30 % of the reasonable profit. Member States should not claw back any extra profit equal to or below that threshold (that is to say, the reasonable profit increased by the incentive amount ⁽¹⁰⁷⁾). Any profit in excess of the threshold must be shared between the aid beneficiary and the Member State, on the basis of the aid intensity resulting from the outcome of the competitive selection procedure ⁽¹⁰⁸⁾.
159. Clawback mechanisms must also take into account profits made from other transactions concerning the State-funded network. For instance, where a company is set up specifically to build or operate the State-funded network, if an existing shareholder of that company sells all or part of its shares in the company within 7 years from the completion of the network or within 10 years from the award of the aid, the Member State must recover any amount by which the sales proceeds exceed the price at which the current shareholder would achieve a reasonable profit ⁽¹⁰⁹⁾.

5.2.4.5. Accounting separation

160. To ensure that aid remains proportional and does not lead to overcompensating or cross-subsidising non-aided activities, the aid beneficiary must ensure accounting separation so that the costs for the deployment and the operation and the revenues from the exploitation of the network deployed with State funding are clearly identified.

5.2.4.6. Role of NRAs, National Competition Authorities, national competence centres and Broadband Competence Offices

161. The role of NRAs in designing the most appropriate State interventions in support of broadband networks is particularly important. The NRAs have gained technical knowledge and expertise due to the crucial role assigned to them by sectoral regulation and are best placed to support public authorities with regard to the design of State interventions.
162. Member States are encouraged to systematically involve NRAs in the design, implementation and monitoring of State interventions, and in particular but not limited to, in (a) the identification of target areas (mapping and public consultation), (b) the assessment of the fulfilment of the step change requirements, and (c) the conflict resolution mechanisms, including in the event of disputes in relation to any of those aspects.
163. In view of the particular expertise of NRAs of the national markets, Member States must consult NRAs, which are best placed, with regard to: (a) the wholesale access products, conditions and pricing (Section 5.2.4.4); and (b) the existing infrastructures that are subject to *ex ante* regulation (Section 5.2.4.3). Where the NRA has been vested with

⁽¹⁰⁴⁾ Reasonable profit should be taken to mean the rate of return on capital that would be required by a typical company, taking into account the level of risk specific to the broadband sector and the type of services provided. The required rate of return on capital is typically determined by the weighted average cost of capital ('WACC').

⁽¹⁰⁵⁾ The participation in the competitive selection procedure depends on expected profit and losses. Losses can arise for instance if the bidder has been too optimistic with regard to expected future revenues arising from the provision of broadband services or if unexpected costs materialise. As the aid granting authority does not reimburse any unexpected losses, a tight clawback mechanism on future profits may increase the overall risk for the investor and discourage participation in the competitive selection procedure.

⁽¹⁰⁶⁾ Efficiency gains must not reduce the quality of the service provided.

⁽¹⁰⁷⁾ If the reasonable profit is 10 %, the maximum incentive amount would be 3 %.

⁽¹⁰⁸⁾ For instance, if the reasonable profit is 10 % and the maximum incentive amount of 3 % is applied, the Member States should not recover any profit not exceeding 13 %. If the actual profit is 20 % and the aid intensity is 70 %, the difference in profit from 13 % to 20 % will be shared as follows: 70 % to the Member State and 30 % to the broadband investor.

⁽¹⁰⁹⁾ For instance, in a case where a shareholder owns 40 % of the shares of the beneficiary company and the net present value (NPV) of the company using the reasonable profit as discount rate is X, if the shareholder sells its shares for a total amount of Y, the Member State must recover $Y - 40\% \times X$ from that shareholder.

the necessary competences for involvement in State interventions for the deployment of broadband networks, the Member State should send the NRA a detailed description of aid measures, at least 2 months prior to a State aid notification to allow the NRA to have a reasonable period of time to provide its opinion.

164. In keeping with best practices, without prejudice to the competences of the NRAs under the regulatory framework, NRAs may issue guidelines for local authorities on, among others, carrying out market analysis and definitions of wholesale access products and pricing. Such guidelines should take into account the regulatory framework and recommendations issued by the Commission ⁽¹¹⁰⁾.
165. In addition to the involvement of NRAs, Member States may also consult National Competition Authorities, for instance to receive advice on how to establish a level playing field for undertakings and to avoid that a disproportionately high share of State funds is earmarked to one undertaking, thereby strengthening a (possibly already dominant) market position ⁽¹¹¹⁾.
166. Member States may set up national competence centres such as Broadband Competence Offices that may help public authorities design State intervention supporting the deployment of broadband networks ⁽¹¹²⁾.

5.2.5. **Transparency, reporting, monitoring of the aid**

167. Member States must comply with the requirements laid down in Section 7 on transparency, reporting and monitoring.

5.3. **Negative effects on competition and trade**

168. Aid for the deployment of fixed and mobile networks may have negative effects in terms of market distortions and impact on trade between Member States.
169. The Commission assesses the significance of the distortion of competition and the effect on trade in terms of impact on competitors and possible crowding out of private investments. The public support may also encourage local service providers to take up services offered by the State-funded network rather than those provided on market terms. Additionally, where the aid beneficiary is likely to be an undertaking that is already dominant on a market or may become dominant due to the public investment, the aid could weaken the competitive constraints that competitors can exert. Even where distortions may be considered limited at an individual level, on a cumulative basis, aid schemes might still lead to high levels of distortion.

5.4. **Weighing the positive effects of aid against the negative effects on competition and trade**

170. The Commission will balance the positive effects of the planned aid on the supported economic activities with the actual and potential negative effects on competition and trading conditions. For State aid to be compatible with the internal market, the positive effects must outweigh its negative effects.
171. First, the Commission will assess the positive effects of the aid on the supported economic activities, including its contribution to digital policy objectives. The Member State must demonstrate, based on a counterfactual analysis, that the measure has positive effects compared to what would have happened without the aid. As indicated in Section 5.2.1, positive effects may include achieving the objectives of the State intervention, such as the roll-out of a

⁽¹¹⁰⁾ This would increase transparency, ease the administrative burden on local authorities and could mean that NRAs would not have to analyse each State aid case individually.

⁽¹¹¹⁾ See, for instance, opinion No 12-A-02 of 17 January 2012 from the French Competition Authority relating to a request for an opinion from the Senate's Committee on the Economy, Sustainable Development and Regional Planning concerning the framework for involvement of local authorities in the deployment of very high-speed networks [Avis No 12-A-02 du 17 janvier 2012 de l'Autorité de la concurrence relatif à une demande d'avis de la commission de l'économie, du développement durable et de l'aménagement du territoire du Sénat concernant le cadre d'intervention des collectivités territoriales en matière de déploiement des réseaux à très haut débit].

⁽¹¹²⁾ See, for instance, Commission Decision C(2008) 6705 of 5 November 2008, case N 237/08 – Germany – Broadband support in Niedersachsen (OJ C 18, 24.1.2009, p. 1); Commission Decision C(2012) 8223 final of 20 November 2012, case SA.33671 (2012/N) – United Kingdom – National Broadband scheme for the UK – Broadband Delivery UK (OJ C 16, 19.1.2013, p. 2) and Commission Decision C(2016) 3208 final of 26 May 2016, case SA.40720 (2016/N) – United Kingdom – Broadband Delivery UK (OJ C 323, 2.9.2016, p. 2).

new network on the market delivering additional capacity and speed as well as lower prices and better choice for end users, and higher quality and innovation. This would also result in more access for end users to online resources and it is likely to stimulate an increase in demand. As a result, this may also contribute to the completion of the Digital Single Market and bring benefits to the Union economy as a whole.

172. In addition, the Commission may also take into account, where relevant, whether the aid brings about other positive effects, for instance improvements in the energy efficiency of network operations, or Union policies such as the European Green Deal.
173. Second, Member States must demonstrate that the negative effects are limited to the minimum necessary. When designing the measure taking into account the necessity, appropriateness and proportionality of the aid (Sections 5.2.2, 5.2.3. and 5.2.4), the Member States should take into account, for example, the size of projects, the individual and cumulative aid amounts, the characteristics of the beneficiaries (for instance whether they have significant market power) and the characteristics of the targeted areas (for instance the number of performant existing or credibly planned networks in a given area). In order to enable the Commission to assess the likely negative effects, Member States are encouraged to submit any impact assessment at their disposal as well as *ex post* evaluations carried out for similar predecessor schemes.

6. COMPATIBILITY ASSESSMENT OF TAKE-UP MEASURES

174. The availability of a broadband network is a prerequisite for the possibility to subscribe to broadband services. However, this could, in some cases, be insufficient to ensure that end users' needs (referred to notably in paragraphs 53 and 61) will be satisfied and the benefits for society as a whole will materialise.
175. The reason for that may be the end users' relatively low propensity to subscribe to broadband services. Such low propensity may be due to various reasons, including: (a) the economic impact of the cost of subscribing to broadband services for end users in general or for certain categories of end users in precarious situations; and (b) the lack of awareness of the benefits that the subscription to broadband services will bring.
176. Demand-side measures, such as vouchers, are designed to reduce the costs for end users and may be useful to remedy a specific market failure in terms of take-up of available broadband services. Widespread and affordable access to connectivity generates positive externalities because of its ability to accelerate growth and innovation in all sectors of the economy. Where it is not possible to ensure affordable access to satisfactory broadband services due to, for instance, high retail prices, State aid may remedy such a market failure. In such cases, granting State aid may produce positive effects.
177. Vouchers do not amount to aid to end users, including individual consumers, if those end users do not carry out an economic activity falling within the scope of Article 107(1) of the Treaty. However, vouchers may amount to aid with regard to end users if the latter carry out an economic activity within the scope of Article 107(1) of the Treaty. Nevertheless, in most cases that aid could fall under the scope of the *De Minimis* Regulation ⁽¹¹³⁾, considering the limited value of vouchers.
178. The case-law of the Court of Justice of the European Union confirms that where an advantage is granted to end users such as individual consumers that do not carry out an economic activity, it may still amount to an advantage to certain undertakings and may thus constitute State aid under Article 107(1) of the Treaty ⁽¹¹⁴⁾.
179. Vouchers may thus constitute aid to undertakings in the electronic communications sector that will be able to improve or increase their offer of services using the existing broadband networks and thus strengthen their market position to the detriment of other undertakings in the broadband sector. Those undertakings are subject to State aid control, if the advantage they receive exceeds *de minimis* levels.

⁽¹¹³⁾ Commission Regulation (EU) No 1407/2013 of 18 December 2013 on the application of Articles 107 and 108 of the Treaty on the Functioning of the European Union to *de minimis* aid (OJ L 352, 24.12.2013, p. 1).

⁽¹¹⁴⁾ Judgment of 4 March 2009, *Italy v Commission*, T-424/05, EU:C:2009:49, paragraph 108; judgment of 28 July 2011, *Mediaset v Commission*, C-403/10 P, EU:C:2011:533, paragraph 81.

180. Voucher measures cannot be provided for areas where there is no network providing the eligible services.

6.1. Social vouchers

181. Social vouchers aim to support certain individual consumers to procure or retain broadband services. They can be found compatible with the internal market on the basis of Article 107(2), point (a), of the Treaty, as 'aid having a social character, granted to individual consumers, provided that such aid is granted without discrimination related to the origin of the products concerned'.

182. To be compatible under Article 107(2), point (a), of the Treaty, social vouchers must be reserved for particular categories of individual consumers whose financial circumstances justify the granting of aid for social reasons (for example, low-income families, students, pupils, etc.)⁽¹¹⁵⁾. To that end, Member States must identify on the basis of objective criteria the categories of consumers that the social voucher schemes intend to target⁽¹¹⁶⁾.

183. Eligible costs may be the monthly fee, the standard⁽¹¹⁷⁾ set-up costs and the necessary terminal equipment for the consumer to access the broadband services. The costs for in-house wiring and some limited deployment in the consumers' private property or in public property in close proximity to the consumers' private property may also be eligible to the extent they are necessary and ancillary to the provision of the service.

184. Social vouchers may be used to subscribe to new broadband services or to retain existing subscriptions ('eligible services').

185. The requirement to avoid any discrimination based on the origin of the products (see paragraph 181) is fulfilled by complying with the technological neutrality principle. Consumers must be able to use social vouchers to procure eligible broadband services from any provider capable of providing them, irrespective of the technology used for providing the service. The social vouchers schemes must ensure equal treatment of all possible service providers and must offer consumers the widest possible choice of suppliers. For that purpose, the Member State must set up an online registry of all eligible service providers or implement an equivalent alternative method to ensure the openness, transparency and non-discriminatory nature of the State intervention. Consumers must have the possibility to consult such information about all undertakings that are able to provide the eligible services. All undertakings capable of providing the eligible broadband services based on objective and transparent criteria (for example, ability to comply with the minimum requirements for the provision of such services), must have the possibility, upon request, to be included in the online registry or in any alternative location chosen by the Member State. The registry (or the alternative location chosen) may also provide additional information to assist consumers, such as the type of services provided by the different undertakings.

186. Member States must carry out a public consultation on the main characteristics of the scheme. The public consultation must last at least 30 days.

187. Member States may implement additional safeguards to avoid possible misuse of social vouchers by consumers, service providers or other beneficiaries involved. For example, in certain circumstances, where only the subscription to new eligible services is subsidised, additional safeguards may be necessary to ensure that social vouchers will not be used to procure broadband services where another member of the same household already has a subscription to an eligible service.

188. In addition, Member States must comply with the requirements laid down in Section 7 on transparency, reporting and monitoring.

⁽¹¹⁵⁾ See Commission Decisions: C(2020) 8441 final of 4 December 2020, case SA.57357 (2020/N) – Greece – Broadband voucher scheme for students (OJ C 41, 5.2.2021, p. 4); C(2020) 5269 final of 4 August 2020, case SA.57495 (2020/N) – Italy – Broadband vouchers for certain categories of families (OJ C 326, 2.10.2020, p. 9).

⁽¹¹⁶⁾ National rules may provide for various implementation means. For instance, the social voucher schemes may provide for planned payments directly to the consumers or directly to the service provider chosen by the consumers.

⁽¹¹⁷⁾ Standard costs are those that apply to all consumers irrespective of their specific situation.

6.2. Connectivity vouchers

189. Connectivity vouchers may be designed for broader categories of end users (for example, connectivity vouchers for consumers or certain undertakings, such as small and medium-sized enterprises) to incentivise the take-up of broadband services that contribute to the development of an economic activity. Such measures can be declared compatible with the internal market on the basis of Article 107(3), point (c), of the Treaty.
190. The Commission will consider such measures to be compatible if they contribute to the development of an economic activity (first condition) without unduly affecting trading conditions to an extent contrary to the common interest (second condition).

6.2.1. *First condition: facilitation of the development of an economic activity*

191. The Commission considers that connectivity voucher schemes that effectively contribute to the take-up of certain broadband services can facilitate the development of a range of economic activities by increasing connectivity and access to broadband services where there is a market failure in the take-up of the relevant services ⁽¹¹⁸⁾.
192. Member States must demonstrate that the connectivity voucher schemes have an incentive effect.
193. Connectivity vouchers should only cover up to 50 % of the eligible costs ⁽¹¹⁹⁾. Eligible costs may be the monthly fee, the standard set-up costs and the necessary terminal equipment for the end users to access the broadband services. The costs for in-house wiring and some limited deployment in the end users' private properties or in public property in close proximity to the end users' private properties may also be eligible to the extent they are necessary and ancillary to the provision of the service.

6.2.2. *Second condition: the aid must not unduly affect trading conditions to an extent contrary to the common interest*

194. State aid should be targeted to situations where aid can bring about a material improvement that the market alone cannot deliver, that is to say, where the aid is necessary to address a market failure in the take-up of the relevant broadband services. For instance, if connectivity voucher schemes are not targeted at addressing end-users' needs in terms of take-up (for instance if vouchers are misused for supporting deployment instead of incentivising demand) or do not respect technological neutrality, such schemes would not be an appropriate policy instrument. In such cases, aid in the form of vouchers would unduly affect trading conditions to an extent contrary to the common interest and therefore it is unlikely to be declared compatible with the internal market.
195. Connectivity vouchers cannot be used for maintaining existing services. Vouchers may be used to procure a new service or upgrade the existing one. When the connectivity vouchers can be used to upgrade an existing subscription, Member States must demonstrate that the voucher scheme does not unduly distort competition at retail and wholesale level, for instance that it will not create disproportionate windfalls profits for some operators while being unduly detrimental to other operators.
196. Connectivity vouchers must be technologically neutral. End users must be able to use connectivity vouchers to procure eligible broadband services from any provider capable of providing them, irrespective of the technology used for providing the services. The connectivity vouchers schemes must ensure equal treatment of all possible service providers and must offer end users the widest possible choice of suppliers. For that purpose, the Member State must set up an online registry of all eligible service providers or implement an equivalent alternative method to ensure the openness, transparency and non-discriminatory nature of the State intervention. End users must have the possibility to consult such information about all undertakings that are able to provide eligible services. All undertakings capable of providing eligible services, on the basis of objective and transparent criteria (for example, ability to comply with the minimum requirements for the provision of such services), must have the possibility, upon request, to be included in the online registry or in any alternative location chosen by the Member State. The registry (or the alternative location chosen) may also provide additional information to assist end users, such as the type of services provided by the different undertakings.

⁽¹¹⁸⁾ Different means of implementation may be provided for under national rules. For instance, a connectivity voucher scheme may provide for payments directly to the end users or directly to the service provider chosen by the end users.

⁽¹¹⁹⁾ See Commission Decision C(2021) 9549 final of 15 December 2021, case SA.57496 (2021/N) – Italy – Broadband vouchers for SMEs (OJ C 33, 21.1.2022, p. 1).

197. In order to minimise market distortions, Member States must carry out a market assessment to identify the eligible providers present in the area and collect information to calculate their market share. The market assessment must determine whether the connectivity voucher scheme could give a disproportionate advantage to some providers to the detriment of others possibly reinforcing (local) market dominance. The market assessment must also determine the actual need to implement a connectivity voucher scheme by comparing the situation in the intervention area(s) with the situation in other areas of the Member State or the Union. Trends in take-up by end users may also be looked at to assess and decide on the voucher scheme.
198. Member States must carry out a public consultation on the main characteristics of the scheme. The public consultation must last at least 30 days.
199. To be eligible, when a provider of broadband services is vertically integrated and has a retail market share above 25 %, it must offer, on the corresponding wholesale access market, wholesale access products on the basis of which any access seeker will be able to provide the eligible services under open, transparent and non-discriminatory conditions. The wholesale access price must be set in accordance with the principles in Section 5.2.4.4.4.
200. To limit negative effects on competition, the duration of a connectivity voucher scheme must in principle not exceed 3 years ⁽¹²⁰⁾. The validity of the vouchers for individual end users must not exceed 2 years.
201. In addition, Member States must comply with the requirements laid down in Section 7 on transparency, reporting and monitoring.

7. TRANSPARENCY, REPORTING, MONITORING

7.1. Transparency

202. Member States must publish the following information in the Commission's transparency award module ⁽¹²¹⁾ or on a comprehensive State aid website at national or regional level:
 - (a) the full text of the decision approving the aid scheme or the individual aid, and its implementing provisions, or a link to it;
 - (b) information on each individual aid award exceeding EUR 100 000, in accordance with Annex II.
203. The information referred to in paragraph 202(b), must be published within 6 months from the date of award of the aid, or, for aid in the form of tax advantages, within 1 year from the date that the tax declaration is due ⁽¹²²⁾.
204. Member States must organise their comprehensive State aid websites, as referred to in paragraph 202, in such a way as to allow easy access to the information. For aid that is unlawful but subsequently found to be compatible, Member States must publish the information within 6 months from the date of the Commission's decision declaring the aid compatible.
205. To enable the enforcement of State aid rules under the Treaty, the information must be available for at least 10 years from the date on which the aid was granted. The information must be published in a non-proprietary spreadsheet data format, which allows data to be effectively searched, extracted, downloaded and easily published on the internet, for instance in CSV or XML format. The general public must be allowed to access the website without any restrictions, including prior users' registration.
206. The Commission will publish on its website the link to the national or regional State aid website referred to in paragraph 202.

⁽¹²⁰⁾ In exceptional circumstances, subject to the Commission's assessment, a connectivity voucher measure may be prolonged if duly justified, provided that it does not unduly affect trading conditions to an extent contrary to the common interest.

⁽¹²¹⁾ 'State Aid Transparency Public Search', available at: <https://webgate.ec.europa.eu/competition/transparency/public?lang=en>

⁽¹²²⁾ If there is no formal requirement for an annual declaration, 31 December of the year for which the aid was granted will be considered as the granting date for encoding purposes.

7.2. Reporting

207. Pursuant to Council Regulation (EU) 2015/1589 ⁽¹²³⁾ and Commission Regulation (EC) No 794/2004 ⁽¹²⁴⁾, Member States are required to submit annual reports to the Commission in respect of each aid measure approved under these Guidelines.
208. In addition to the annual reports referred to in paragraph 207, Member States must submit a report to the Commission every 2 years containing key information on the aid measures approved under these Guidelines, in accordance with Annex III.

7.3. Monitoring

209. Member States must maintain detailed records regarding all aid measures. Those records must contain all information necessary to establish that all the compatibility conditions set out in these Guidelines are fulfilled. Member States must maintain those records for 10 years from the date of award of the aid and must provide them to the Commission upon request.

8. EX POST EVALUATION PLAN

210. To further ensure that distortions of competition and trade are limited, the Commission may require schemes to be subject to an *ex post* evaluation in order to verify (a) whether the assumptions and conditions which led to the compatibility decision have been realised; (b) the effectiveness of the aid measure in the light of its pre-defined objectives; (c) the impact of the aid measure on markets and competition and that no undue distortive effects arise throughout the duration of the aid scheme that are contrary to the interests of the Union ⁽¹²⁵⁾.
211. *Ex post* evaluation will be required for schemes with large aid budgets, or containing novel characteristics, or when significant market, technology or regulatory changes are foreseen. In any event, *ex post* evaluation will be required for schemes with a State aid budget or accounted expenditure over EUR 150 million in any given year or EUR 750 million over their total duration. The total duration of the schemes includes the combined duration of the scheme and any predecessor scheme covering a similar objective and geographical area, starting from publication of these Guidelines. Given the objectives of the evaluation, and in order not to impose a disproportionate burden on Member States and on smaller aid projects, *ex post* evaluations are only required for aid schemes the total duration of which exceeds 3 years, starting from publication of these Guidelines.
212. The *ex post* evaluation requirement may be waived with respect to aid schemes that are the immediate successors of schemes covering a similar objective and geographical area that have been subject to an evaluation, delivered a final evaluation report in compliance with the evaluation plan approved by the Commission and have not generated any negative findings. Any scheme where the final evaluation report is not in compliance with the approved evaluation plan must be suspended with immediate effect.
213. The aim of the evaluation is to verify whether the underlying assumptions and conditions for the compatibility of the scheme have been achieved, in particular the necessity and effectiveness of the aid measure in the light of its general and specific objectives. It should also assess the impact of the scheme on competition and trade.
214. As regards aid schemes subject to the evaluation requirement referred to in paragraph 211, Member States must notify a draft evaluation plan, which will form an integral part of the Commission's assessment of the scheme. The plan must be notified:
- (a) together with the aid scheme, if the State aid budget of the scheme exceeds EUR 150 million in any given year or EUR 750 million over its total duration;
 - (b) within 30 working days following any significant change that increases the budget of the scheme to over EUR 150 million in any given year or EUR 750 million over the total duration of the scheme;

⁽¹²³⁾ Council Regulation (EU) 2015/1589 of 13 July 2015 laying down detailed rules for the application of Article 108 of the Treaty on the Functioning of the European Union (OJ L 248, 24.9.2015, p. 9).

⁽¹²⁴⁾ Commission Regulation (EC) No 794/2004 of 21 April 2004 implementing Council Regulation (EU) 2015/1589 laying down detailed rules for the application of Article 108 of the Treaty on the Functioning of the European Union (OJ L 140, 30.4.2004, p. 1).

⁽¹²⁵⁾ See for instance Commission Decision C(2012) 8223 final of 20 November 2012, case SA.33671 (2012/N) – United Kingdom – National Broadband scheme for the UK – Broadband Delivery UK (OJ C 16, 19.1.2013, p. 2).

- (c) for schemes not falling under point (a) or (b), within 30 working days following the recording in official accounts of expenditure under the scheme in excess of EUR 150 million in any year.
215. The draft evaluation plan must be in accordance with the common methodological principles provided by the Commission ⁽¹²⁶⁾. Member States must publish the evaluation plan approved by the Commission.
216. The *ex post* evaluation must be carried out by an expert independent from the aid granting authority on the basis of the evaluation plan. Each evaluation must include at least one interim and one final evaluation report. Member States must publish both reports.
217. The final evaluation report must be submitted to the Commission in due time to allow it to assess any prolongation of the aid scheme and at the latest 9 months before its expiry. That period may be reduced for schemes triggering the evaluation requirement in their last 2 years of implementation. The precise scope and arrangements for each evaluation will be set out in the decision approving the aid scheme. The notification of any subsequent aid measure with a similar objective must describe how the results of the evaluation have been taken into account.

9. FINAL PROVISIONS

218. The Commission will apply the principles set out in these Guidelines from the day following that of their publication in the *Official Journal of the European Union*.
219. The Commission will apply the principles set out in these Guidelines to notified aid on which it is called upon to take a decision after the date of publication of these Guidelines in the *Official Journal of the European Union*, even where the aid was notified before that date.
220. In accordance with the Commission notice on the determination of the applicable rules for the assessment of unlawful State aid ⁽¹²⁷⁾, the Commission will apply the rules in force when the aid was granted to unlawful aid. The Commission will apply the principles set out in these Guidelines accordingly if unlawful aid is granted after their date of publication.
221. The Commission proposes to Member States, on the basis of Article 108(1) of the Treaty, the following appropriate measures:
- (a) Member States must amend, where necessary, their existing aid schemes in order to bring them in line with Section 7.1 of these Guidelines within 12 months after their publication in the *Official Journal of the European Union*.
- (b) Member States should give their explicit unconditional agreement to the appropriate measures (including amendments) proposed in point (a) within 2 months from the date of publication of these Guidelines in the *Official Journal of the European Union*. In the absence of any reply within the 2 months, the Commission will assume that the Member State in question does not agree with the proposed measures.

⁽¹²⁶⁾ Commission staff working document, Common methodology for State aid evaluation, 28 May 2014, SWD(2014) 179 final, or any of its successors.

⁽¹²⁷⁾ OJ C 119, 22.5.2002, p. 22.

ANNEX I

Mapping of fixed and mobile access networks – best practices referred to in section 5.2.2.4.1 of these Guidelines**1. Scope**

This Annex outlines best practices on how to carry out the mapping exercise to support State aid interventions for the deployment of fixed access and mobile access networks.

This Annex aims to help Member States design a transparent methodology to gather and assess information on the availability and performance of networks.

This Annex builds on and complements, for the purposes of State aid, the methodology developed in accordance with Article 22 of Directive (EU) 2018/1972 of the European Parliament and of the Council ⁽¹⁾ and the implementing guidelines of the Body of European Regulators for Electronic Communications (BEREC) on geographical surveys of network deployments ⁽²⁾.

This Annex sets out, for fixed access networks and for mobile and fixed wireless access networks, best practices on:

- (a) the criteria for mapping the performance of the networks;
- (b) the information that the competent public authorities may collect to verify the accuracy of the information provided;
- (c) the additional information about infrastructure that the competent public authorities may request operators to provide in specific situations, when it is duly justified in order to carry out an in-depth assessment ⁽³⁾.

2. Mapping of fixed access networks**2.1. Criteria for mapping the performance of fixed access networks**

Pursuant to paragraph 73(a) of these Guidelines, Member States must assess the performance of networks expressed at least in terms of download and upload speeds that are or will be available to end users under peak-time conditions.

Peak-time conditions as defined in paragraph 19(k) of these Guidelines should be understood as the conditions that exist whenever a minimum of 10 % of the users ⁽⁴⁾ are transmitting concurrently at the nominal peak rate ⁽⁵⁾ provided by the operator to each of them, both downstream and upstream, which correspond to the usual oversubscription ratio definition ⁽⁶⁾.

2.2. Information for verification purposes

To limit risks of opportunistic behaviours by stakeholders and ensure that the information provided is sufficient, consistent, and can be relied on, with a view to avoiding delay to the delivery of services in the target area, the competent public authorities carrying out the mapping exercise may decide to require stakeholders to submit further information regarding their networks for verification purposes.

The competent public authorities may ask stakeholders to provide the full description of the methodology used to calculate their achievable performance, including, but not limited to:

- (a) the access network technology used (FTTH, FTTB, ADSL, VDSL, VDSL + vectoring, DOCSIS.x, etc.), with full specification of the corresponding standard;

⁽¹⁾ Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code (OJ L 321, 17.12.2018, p. 36).

⁽²⁾ BoR (20) 42 and related BoR (21)82.

⁽³⁾ This may be subject to confidential treatment in accordance with national law, as relevant.

⁽⁴⁾ This includes both connected and potential users.

⁽⁵⁾ This is the peak rate included in the end users' contracts.

⁽⁶⁾ The same network infrastructure can provide different performance levels to the end users depending on how many users are being multiplexed in bottleneck links and what their nominal speeds are. Performance depends on the number of users concurrently active (which is higher during peak-time conditions). Such 'statistical multiplexing gain' (minimum 10 % meaning 1:10 activity level) requires also that accurate-enough user traffic distribution models are employed by operators.

- (b) the topology of the network (for instance P2P or a P2MP), including a simplified graph that reflects the physical layout of the cables/fibres (for instance, a tree topology in a GPON);
- (c) the bottleneck links in the topology of the network, defined as the network segments with larger statistical multiplexing gain, including clear information concerning either (i) the oversubscription ratio used for dimensioning such a link (for instance in the backhaul network) or (ii) the capacity planning exercise performed for such bottleneck links. In any case, the public authority may request a statistical characterisation of the achievable speed for an end user (for instance the average or typical speed or probability of achieving the nominal speed to be provided to the end user at any point in time, with indication of the user model assumptions).

2.3. *Information for in-depth verification purposes*

The competent public authorities may decide to require stakeholders to submit further information on network components and their locations for in-depth verification purposes, for instance to review the methodology used to calculate the performance submitted.

The competent public authorities may thus ask stakeholders to submit further information on the access part of the fixed network, including but not limited to:

- (a) the location of the cabinets and the wiring distance from the cabinet to the household;
- (b) clear information on link-budget calculations (for instance on how the received signal power level is mapped to bit-rates, link-budget margins used etc.). The competent public authorities may ask operators to provide all applicable link-budgets used to design and dimension the network services, with their key parameters, including the description of the methodology followed by the operator to develop the link-budget and the rationale.

3. **Mapping of mobile and fixed wireless access networks**

3.1. *Criteria for mapping the performance of mobile and fixed wireless access networks*

For the purpose of this mapping method, the Member State should request stakeholders to calculate their network performance taking into account the following principles:

- (a) use the best industry practices ⁽⁷⁾ considering all the major effects on the wireless signal propagation ⁽⁸⁾;
- (b) base the calculation on a 95 % cell edge probability ⁽⁹⁾ of reaching the declared performance and in any case no less than 95 % probability of reaching the declared performance in each of the grid points considering possible variations of propagation conditions due to random effects and possible variations among the points within the area considered (at address level or on the basis of maximum 100 meter × 100 meter grids);
- (c) assume peak-time conditions as follows:
 - (i) for mobile networks, a nominal cell load ⁽¹⁰⁾ not lower than 50 %, or higher in the case of peak-time traffic conditions being significantly higher;

⁽⁷⁾ Best industry practices mean modelling parameters, tools, planning, and error boundaries that are common in planning of wireless communications systems and business, and which can be deemed to be faithful and correct enough by experts in the field if they were to verify the methodology.

⁽⁸⁾ Such as terrain, building, and clutter when predicting the received signal power.

⁽⁹⁾ The 'cell edge probability' means the likelihood that the minimum performance will be met at the ultimate edge of the coverage area (maximum claimed coverage distance in the area considered). The calculation needs to be based on realistic propagation simulations, link-budget calculations, and sufficient margins.

⁽¹⁰⁾ The 'cell load' (cell loading) means the average percentage of the resources of a base station that are used by end-users with respect to a certain service.

- (ii) for fixed wireless access networks, the expected realistic peak-time traffic conditions should be used to derive the appropriate cell load for calculations ⁽¹¹⁾;
- (d) provide the performance per end user and based on outdoor antennas. If a receiving antenna is shared among multiple end users, the overall performance should be considered equally shared among end users ⁽¹²⁾;
- (e) provide the performance per technology and per operating frequency in case of coverage with multiple technologies ⁽¹³⁾ and multiple frequencies ⁽¹⁴⁾, considering the bandwidth actually available per frequency. In case of use of unlicensed frequencies, this should be clearly stated.

When providing information to the requesting body, operators should consider in particular:

- (a) the type ⁽¹⁵⁾ of backhaul and its capacity for each base station ⁽¹⁶⁾;
- (b) for fixed wireless access networks, the number of served and of passed premises present in each calculated grid.

3.2. *Information for verification purposes*

To limit risks of opportunistic behaviours by stakeholders and ensure that the information provided is sufficient, consistent, and can be relied on, with a view to avoiding delay to the delivery of services in the target area, the competent public authorities carrying out the mapping exercise may decide to require stakeholders to submit further information for verification purposes.

The competent public authorities may thus ask stakeholders to provide the full description of the methodology used to calculate their coverage maps, including, but not limited to:

- (a) propagation models and key parameters for propagation simulation;
- (b) general information on network components and in particular on antennas (for instance transmission power, MIMO, antenna site locations);
- (c) key information on link-budget calculation (for instance, how the received signal power level is mapped to bit-rates, link-budget margins used etc.). Stakeholders should provide all applicable link-budgets used to design and dimension the network services, with their key parameters, including also the description of how the stakeholder developed the link-budget and the rationale;
- (d) the location of cell sites;
- (e) characteristics of the backhaul.

3.3. *Information for in-depth verification purposes*

The competent public authorities may decide to require stakeholders to submit further information on network components and their locations for in-depth verification purposes, for instance to review the methodology used to calculate the performance submitted. The competent public authorities may thus ask stakeholders to submit further information on their networks, including but not limited to:

- (a) number of transmitters at each site;
- (b) the ground elevation of such transmitters;

⁽¹¹⁾ If peak-traffic estimation is not used, the nominal 90 % cell load for fixed wireless access should be used. The higher cell load for fixed wireless access (compared to mobile networks) reflects the expected different usage pattern resulting in higher competition for the use of the shared resources of the serving base station.

⁽¹²⁾ In fixed wireless access, this may be the case for shared rooftop antennas for a multi-dwelling building.

⁽¹³⁾ Technologies include: 3G UMTS and HSPA technologies; 4G LTE or LTE-Advanced technologies; 5G either the 3GPP Release 15 New Radio (NR) non-standalone (with 4G core network) or NR standalone (with a native 5G core network) and further developments (such as 3GPP Release 16). It is recommended that the public authority collects information on the used 3GPP based technologies (at least the 3GPP release levels).

⁽¹⁴⁾ This is to separate sub-6 GHz and mm-wave frequency bands as they are often used for different categories of services.

⁽¹⁵⁾ Fibre optic, carrier grade copper Ethernet, wireless, etc.

⁽¹⁶⁾ In the case of optical fibre connection, this can be normally assumed to be sufficient.

- (c) number of sectors at each cell site;
 - (d) used technology at transmitters including MIMO-order, available channel bandwidth;
 - (e) the effective isotropic transmission power employed by each transmitter.
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ANNEX II

Information to be published by Member States pursuant to paragraph 202(b) of these Guidelines

The information on individual awards referred to in paragraph 202(b) of these Guidelines must include the following ⁽¹⁾:

- (a) identity of the individual aid beneficiary:
 - (i) name;
 - (ii) aid beneficiary's identifier;
- (b) type of aid beneficiary at the time of application:
 - (i) SME;
 - (ii) large enterprise;
- (c) region in which the aid beneficiary is located, at NUTS level II or below;
- (d) the main sector or activity of the aid beneficiary for the given aid, identified by the NACE group (three-digit numerical code) ⁽²⁾;
- (e) aid element expressed in full in the national currency. For schemes in the form of tax advantage, the information on individual aid amounts ⁽³⁾ can be provided in the following ranges (in EUR million):
 - [0,1–0,5],
 - [0,5–1];
 - [1–2];
 - [2–5];
 - [5–10];
 - [10–30];
 - [30–60];
 - [60–100];
 - [100–250]
 - [250 and over];
- (f) where different from the aid element, the nominal aid amount, expressed in full in the national currency ⁽⁴⁾;
- (g) aid instrument ⁽⁵⁾:
 - (i) grant/interest rate subsidy/debt write-off;
 - (ii) loan/repayable advances/reimbursable grant;
 - (iii) guarantee;
 - (iv) tax advantage or tax exemption;

⁽¹⁾ With the exception of business secrets and other confidential information in duly justified cases and subject to the Commission's agreement [Commission communication on professional secrecy in State aid decisions, C(2003) 4582 (OJ C 297, 9.12.2003, p. 6)].

⁽²⁾ Regulation (EC) No 1893/2006 of the European Parliament and of the Council of 20 December 2006 establishing the statistical classification of economic activities NACE Revision 2 and amending Council Regulation (EEC) No 3037/90 as well as certain EC Regulations on specific statistical domains (OJ L 393, 30.12.2006, p. 1).

⁽³⁾ The amount to be published is the maximum allowed tax benefit and not the amount deducted each year (for instance in the context of a tax credit, the maximum allowed tax credit shall be published rather than the actual amount which might depend on the taxable revenues and vary each year).

⁽⁴⁾ Gross grant equivalent, or where applicable, the amount of the investment. For operating aid, the annual aid amount per aid beneficiary can be provided. For fiscal schemes, this amount can be provided by the ranges set out point e of this Annex. The amount to be published is the maximum allowed tax benefit and not the amount deducted each year (for instance in the context of a tax credit, the maximum allowed tax credit shall be published rather than the actual amount, which might depend on the taxable revenue and vary each year).

⁽⁵⁾ If the aid is granted through multiple aid instruments, the aid amount shall be specified by instrument.

- (v) risk finance;
 - (vi) other (please specify);
 - (vii) date of award and date of publication;
 - (viii) objective of the aid;
 - (h) identity of the granting authority or authorities;
 - (i) where applicable, name of the entrusted entity, and the names of the selected financial intermediaries;
 - (j) reference of the aid measure, as stated in the decision approved under these Guidelines.
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ANNEX III

Information to be provided by Member States pursuant to paragraph 208 of these Guidelines

The report referred to in paragraph 208 of these Guidelines must include, for the relevant reporting period, and for each individual project implemented in application of an aid measure approved under these Guidelines, the following information:

- (a) name of the aid beneficiary or beneficiaries;
 - (b) the total cost (or estimated total cost) of the project and average cost per premises passed;
 - (c) aid amount awarded and aid expenditure;
 - (d) aid intensity;
 - (e) sources of public financing;
 - (f) the coverage rates and numbers prior to and after the State intervention;
 - (g) for projects supporting the deployment of broadband networks:
 - (i) date when the network was put in use;
 - (ii) technology deployed on the publicly funded network;
 - (iii) upload and download speeds of services provided;
 - (iv) wholesale access products offered, including conditions for access and prices/pricing methodology;
 - (v) wholesale access products requested on reasonable demand, if applicable, and treatment of such requests;
 - (vi) number of access seekers and service providers using wholesale access products;
 - (vii) retail prices before and after implementation of the measure;
 - (viii) number of premises passed by the publicly funded infrastructure;
 - (ix) take-up rates;
 - (h) for project supporting take-up of broadband services, such as voucher schemes:
 - (i) duration of the aid measure;
 - (ii) voucher value(s);
 - (iii) type of eligible subscriptions/services, including in the form of customer devices, as well as in-building wiring and/or drop down cable within a private domain;
 - (iv) take-up rates before and after implementation of the measure and the number of end-users having benefited from the aid measure (by category, for instance individual end-users or SMEs and by type of subscriptions/service supported);
 - (v) number of eligible broadband service providers;
 - (vi) number of broadband service providers that have actually benefited from the aid measure;
 - (vii) evolution of the market position of operators by type of subscriptions/services supported, taking into account the relevant infrastructure and technologies (FTTH, FTTC, DOCSIS, FWA, etc.);
 - (viii) wholesale and retail prices before and after implementation of the measure.
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ANNEX IV

Typical interventions for broadband support

In its case practice, the Commission has observed certain funding mechanisms used by several Member States to foster broadband deployment, which typically amount to State aid within the meaning of Article 107(1) of the Treaty. The following description of typical interventions models is illustrative and not exhaustive, as public authorities might develop different ways of supporting broadband deployment or deviate from the models described in the following paragraphs.

1. **Gap funding model:** In the gap funding ⁽¹⁾ model, Member States ⁽²⁾ support the deployment of fixed or mobile networks by awarding direct monetary grants or subsidies to broadband investors ⁽³⁾ to design, build, manage and commercially exploit a network, taking into account the relevant receipts and a reasonable profit. In the gap funding model, reasonable profit is determined as the rate of return on capital that would be required by an investor, taking into account the level of risk specific to the broadband sector and the type of services provided. The required rate of return on capital is typically determined by the weighted average cost of capital (WACC). In determining what constitutes a reasonable profit, Member States usually introduce incentive criteria relating, in particular, to the quality of service provided and gains in productive efficiency. Any rewards linked to productive efficiency gains are set at a level such as to allow balanced sharing of those gains between the broadband investor and the Member State or the end users. Under the gap funding model, the infrastructure built is usually fully owned by the aid recipient that bears the risks associated with building new infrastructure and attracting sufficient customers.
2. **Support in kind model:** Member States support fixed or mobile broadband deployment by putting at the disposal of broadband network operators existing or newly built infrastructures. This support takes many forms, with the most recurring being Member States providing broadband passive infrastructure by carrying out civil engineering works (for instance by digging up a road), by placing ducts or dark fibre or giving access to existing infrastructure (for instance ducts, poles or towers).
3. **Direct investment model:** Member States build a fixed or mobile network and operate it directly through a branch of the public administration or via an in-house operator ⁽⁴⁾. The State-funded network is often operated as a wholesale-only network available to retail broadband services providers on a non-discriminatory basis.
4. **Concessionaire model:** Member States finance the roll-out of a fixed or mobile broadband network, that remains in public ownership, whereas its operation is offered through a competitive selection procedure to an electronic communication provider to manage and commercially exploit it. The network may be run by a broadband network operator to provide only wholesale services or, alternatively, to provide both wholesale and retails services.

⁽¹⁾ 'Gap funding' generally refers to the difference between investment costs and expected profits.

⁽²⁾ This includes any public authority.

⁽³⁾ The term 'investors' denotes undertakings or broadband network operators that invest in the construction and deployment of broadband infrastructures.

⁽⁴⁾ Commission Decision C(2011) 7285 final of 19 October 2011, case N 330/2010 – France – Programme national 'Très Haut Débit' – Volet B (OJ C 364, 14.12.2011, p. 2), which covered various intervention modalities, inter alia one in which the collectivités territoriales can operate own broadband networks as a 'régie' operation.