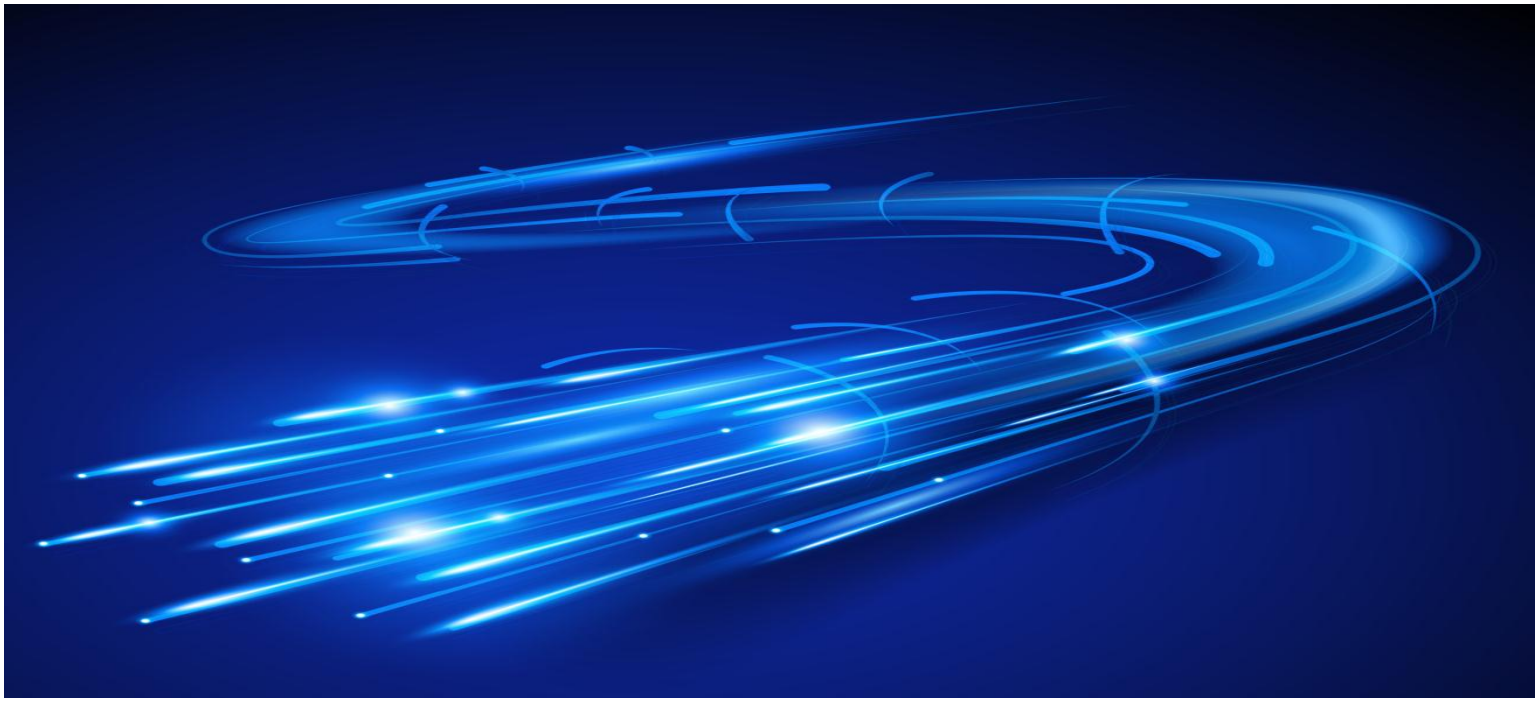
European Commission

The broadband State aid rules explained

An eGuide for Decision Makers



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Abstract

The present Guide is targeting on public sector decision makers and it aims at explaining the principles of the European Commission's assessment of public support to broadband deployment projects on the basis of the "Broadband Guidelines". The objective is to make broadband infrastructure deployment faster and easier. The Guide illuminates the implications of broadband deployment in white, grey and black (basic broadband or NGA) areas and it elucidates in detail the key criteria applied for the assessment of State aid *(*compatibility conditions, "step change", the proportionality of a broadband measure, and the balancing test). Furthermore, the Guide presents an overview of a range of measures that either are not constituting State aid (e.g. rolling-out a broadband network for non-commercial purposes, activities under the "market economy investor principle") or, albeit constituting State aid, for which no notification is required (like e.g. support under an already existing broadband framework scheme, the "de minimis" rule, the upcoming new possibilities under the revised General Block Exemption Regulation, and State aid approval for broadband projects under the Regional (State) aid Guidelines). In addition, the Guide gives detailed recommendations as to an efficient execution of a broadband project, in particular vis-à-vis the pre-notification and notification.

Abstrait

Ce Guide est destiné aux décisionnaires du secteur public et a pour objectif d'expliquer les principes d'évaluation par la Commission Européenne des aides d'État aux projets de déploiement du haut débit sur la base des "Lignes directrices haut débit". L'idée est d'accélérer et de faciliter la création d'une infrastructure haut débit. Le Guide relève les implications du déploiement du haut débit selon des zones blanches, grises et noires (haut débit classique ou NGA) et détaille clairement les *c*ritères clés appliqués pour l'évaluation des aides d'État *(*conditions de compatibilité, "palier", proportionnalité d'une mesure haut débit et test de mise en balance). De plus, le Guide présente une palette de mesures qui ne constituent pas des aides d'État (ainsi déploiement d'un réseau à haut débit à des fins non-commerciales, activités selon le "principe de l'investisseur en économie de marché") ou, bien qu'elles constituent des aides d'État, ne requérant aucune notification (ainsi les aides dans le cadre d'un régime haut débit préexistant, la règle "de minimis", les nouvelles possibilités futures selon le Règlement général d'exemption par catégorie révisé et l'approbation des aides d'État pour les projets haut débit selon les Lignes directrices des aides (d'État) régionales). En outre, le Guide détaille des recommandations pour une *e*xécution efficiente d'un projet haut débit, en particulier vis-à-vis de la notification préalable et de la notification.

Executive Summary

Objective and key focus of the Guide

1. Fast and widely available broadband is a key ingredient for growth and prosperity. Yet, a substantial number of citizens and companies do not have sufficiently fast broadband at their disposal, because the market fails to deliver. The present Guide is targeting on you as a public sector decision maker thinking if and how to deploy a broadband project. We anticipate that you are already aware that broadband connectivity is of strategic importance for growth and innovation in all sectors of the economy and for social and for territorial cohesion. Therefore you have come to the conclusion to improve the current status of broadband infrastructure deployment and the provision of broadband services, respectively, in your area. Your concrete activities might be seen as "State aid". State aid is subject to certain rules which help that public money is spent only when there is a market failure. This Guide will inform you on the principles of the European Commission's assessment of public support to broadband deployment projects on the basis of the (new) "Broadband State aid Guidelines" (published in January 2013) and (briefly) on other State aid rules. It shall help you to deploy your envisaged broadband infrastructure faster and easier and thereby support prosperity for citizens and enterprises.

The rationale of (broadband related) State aid considerations

2. A guiding principle in the European Union is that any State intervention should limit as much as possible the risk of crowding out or replacing private investments, of altering commercial investment incentives and ultimately of distorting competition. Applying the principle to the deployment of broadband infrastructure, it needs to be ensured that public funds are carefully used and that your aid is complementary and does not substitute or distort investments of market players. To put it another way: Your envisaged broadband deployment activity should be targeted at market failures. State aid for broadband should, therefore, not be used in areas where market operators plan to invest or have already invested. The decision whether a concrete governmental intervention is compatible or unlawful aid is taken solely by the European Commission.

Broadband deployment: technologies, business models and financing options

3. A great number of access technologies are capable of providing broadband communications. These technologies differ very much in particular with regard to pure technological (e.g. wired vs. wireless), performance (e.g. maximum bandwidth available), and economic parameters (e.g. costs of deployment). You have the choice as to the selection of a suitable technology that fits your concrete requirements, State aid rules are technology neutral.

4. You also have choice as to potential business models for your broadband project. Examples are explained in the Guide in Section 2.2.

5. There are several different ways how you can directly or indirectly support the financing of your broadband project. Examples are: (1) European funds such as the European Agricultural Fund for Rural Development and/or the European Regional Development Fund (normally this requires co-funding from the Member State); (2) direct monetary grant to an entity to build, manage and commercially exploit your envisaged broadband network; (3) tax rebates; (4) loans with a below-market rate of interest ("soft loan") or "guarantee"; (5) provision of particular „physical resources" you are owning to third parties which are necessary inputs for broadband deployment (e.g. ducts); (6) public procurement policy, e.g. becoming an "anchor client" of an entity that is deploying broadband infrastructure in your area. All of these ways are potentially subject to State aid approval.

"Basic broadband", NGA networks, backhaul networks

6. The Broadband Guidelines distinguish basic broadband and NGA networks. Basic broadband networks are based on the existing fixed or wireless networks including (ADSL, ADSL2+ networks), non-enhanced cable (e.g. DOCSIS 2.0), 3G mobile networks (UMTS) and satellite systems. On the other hand, NGA networks rely wholly or partly on optical elements and are capable of delivering broadband access services with enhanced characteristics. NGA networks currently comprise fibre-based access networks (e.g. FTTB, FTTH, FTTC/VDSL), advanced upgraded cable networks (HFC/DOCSIS 3.0), and certain advanced wireless access networks. As technology evolves, this enumeration might change in the future.

Distinction of deployment areas in white, grey, black areas

7. The Broadband Guidelines are based on a classification of your area according to its existing or expected future broadband infrastructure deployment status, thereby defining the market situation both for basic and for NGA broadband networks.

8. Basic broadband networks: In *white* areas no provider of broadband access services currently is operating and there is no such provider to be expected in the coming three years either. In this case, a public intervention is likely to be in line with the common interest and therefore State aid is likely to be compatible. In *grey* areas there is one (infrastructure-based) provider already active, however, another network is unlikely to be developed in the next three years. In this case, a more detailed analysis and a thorough compatibility assessment will be necessary. In *black* areas there are or there will be in the next three years at least two basic broadband networks of different operators. Broadband services therefore are provided under competitive conditions (infrastructure-based competition) and it can be assumed that there is no market failure. Accordingly, there is very little scope for State intervention to bring further societal

benefits by subsidizing another basic broadband network. However, it may well be possible to support an NGA network in black basic broadband areas.

9. NGA networks: In a "*white NGA*" area no NGA network at present exists and is not likely to be built within the next three years by private investors. In this case your area is in principle eligible for State aid to NGA. Your area is considered to be a "*grey NGA*" area if only one NGA network currently is in place or is being deployed in the coming three years and there are no plans by any operator to deploy a further NGA network in the coming three years. Under such circumstances the European Commission will carry out a more detailed analysis in order to verify whether State intervention really is needed. You can take for granted that the deployment of a second broadband infrastructure which is to compete with the existing one as such is not a sufficient argument to accept your aid. Rather, the second network needs to provide a substantial improvement in terms of e.g. competitive prices and higher speeds. In a *"black NGA"* area at least two NGA networks of different operators already exist or they will be deployed in the coming three years. In this case, you risk that the Commission will conclude that your support for an additional publicly funded, equivalent NGA network is incompatible with the internal market targets. In practice that means that the project is either modified or withdrawn. Prohibition decisions for broadband State aid are extremely rare. Yet, there might be an exception for your concrete project: your intervention could be allowed if your NGA network constitutes a step change and is able to provide ultra-fast speeds well above 100 Mbps.

Criteria applied by the European Commission to evaluate a broadband State aid case

10. Every aid measure has to comply with specific "compatibility conditions", i.e. your measure should achieve an objective of common interest, address a market failure, be appropriate as a policy instrument, have an incentive effect, be limited to the minimum necessary, entail limited negative effects, and be "transparent". Meeting these principles is necessary, i.e. failure to comply with one of the conditions will result in declaring the aid incompatible with the internal market.

11. A crucial issue for the assessment of your broadband project is whether and to what extent your network is able to ensure a "step change" in terms of broadband availability. Such a step change is present if your public intervention entails significant new investments regarding broadband infrastructure and if this infrastructure brings significant new capabilities to the market in terms of broadband service availability and capacity, speeds and competition. New capabilities regarding service availability, capacity and speed are e.g. likely to be present if your project focuses on an upgrade from a basic to an NGA broadband network. Likewise, certain upgrades of an NGA network such as the extension of fibre connectivity nearer to the end-user might substantiate a step change, e.g. if it entails an increase of speed from, say, 30 Mbps to 100 Mbps. New capabilities as to competition are e.g. unleashed if your project allows for effective (wholesale) access at different levels of the infrastructure and/or

unbundling. You have to address the step change issue by comparing your planned network capabilities to those of existing as well as concretely planned network roll-outs. Substantiating the step change caused by your concrete measure is a key requirement for the notification of your project. You should be aware that it is not sufficient to just claim that there is a step change. Rather, you should take substantial effort to demonstrate the added value of your network funded by State aid and you must provide concise reasons as well as sound and pertinent empirical evidence.

12. A suite of necessary conditions must be fulfilled to demonstrate the proportionality of your measure encompassing to conduct a detailed mapping and analysis of coverage as well as a public consultation, to specify your tender in a “technologically neutral” manner, to base your decision on a competitive selection process, and to select the most economically advantageous offer, to make use of existing infrastructure, to meet certain requirements as to wholesale access and to take care that specific requirements regarding wholesale access pricing are met, to fulfill specific duties regarding monitoring of your broadband project and to be prepared that a “clawback mechanism” might apply, and to fulfill specific duties in order to meet transparency and reporting requirements.

13. If all of these necessary conditions are met, the European Commission balances the positive effects of the aid measure against the potential negative effects (“balancing test”). Your broadband measure should be designed in a way that the overall balance of the effects of the measure is positive.

14. The public consultation may lead to unclear or insufficient information on the existing infrastructures or possible incorrect broadband investment announcements by operators which may wish to block State aid without really wanting to invest in the near future. There are rules how to cope with this. In case of incomplete or unclear information you should contact the respective institution(s) in your country. In case your consultation yields neither replies from existing providers nor from entities with investment plans at all, you can normally go ahead, provided the consultation was carried out properly and the main stakeholders knew about it. The announcements you receive regarding upcoming broadband investments should be adequate to substantiate the commitments from the private investor(s). Such commitments should ensure that significant progress in terms of coverage will be made and they may include suitable milestones which would have to be achieved during the 3-year period and reporting on the progress made. If a milestone is not achieved, you may then go ahead with your deployment plans. This rule applies both for basic and for NGA networks. If you are uncertain about the real validity of the investment plans you receive you could also contact the respective institution(s) in your country.

Measures not constituting State aid

15. Specific measures are very well suited to support broadband deployment, yet, usually they are not constituting State aid.

16. If you are rolling-out a broadband network for non-commercial purposes, i.e. if you are constructing a network or procuring broadband services only to satisfy your own needs, such a measure - under certain circumstances - might not constitute State aid. You might, however, come to the conclusion that the network established for your purposes should be marketed also to third parties, i.e. outside public institutions. Such a network opened for the use of broadband investors or operators is likely to be classified as State aid, and an approval of such project is often no problem.

17. Your project might meet the “market economy investor principle” (MEIP). Broadly speaking, this principle states that if you are placing capital, directly or indirectly, at the disposal of an undertaking and such support corresponds to “normal” market conditions it cannot be regarded as State aid. In other words, the State should share the same risks and opportunities as the private investor.

18. Under specific conditions the deployment of broadband networks and the provision of broadband access to end users can be viewed as a service of general economic interest (SGEI). However, normally it is not up to the local decision makers to decide alone on an SGEI status. If the SGEI conditions are fulfilled the public financing of broadband deployment is perceived to be (1) no State aid or (2) compatible aid. Yet, it needs to be underscored from the outset that getting an approval of an SGEI for your broadband project is one of the more complicated ways to proceed. You should therefore contact a relevant broadband State aid institution in your country.

Measures constituting State aid but for which no notification is required

19. There are several measures constituting State aid but for which no notification is required.

20. In many cases it might turn out that your envisaged broadband project fits into an already existing framework scheme under the Broadband Guidelines within your country. The advantage of making use of such a scheme is that it has already been assessed in terms of State aid requirements. Thus, you avoid duplication of efforts and resources, i.e. in particular there is no need for you to notify your concrete measure.

21. The “de minimis” rule might lead to a great simplification for you: The granting of “small” amounts of support for your broadband project is exempted from the notification obligation. You can use the “de minimis” rule if the total amount of grants for the same eligible costs over any period of three fiscal years does not exceed EUR 200,000 per beneficiary. The amount does not need to be a cash grant and can in principle also be in kind (e.g. in the form of ducts), a reimbursable grant or even a participation in a company. Also loans are possible under the “de minimis” rules, Overall, it is fair to state

that broadband aid falling under “de minimis” is first and foremost relevant for “small” (e.g. regional and local) entities. You should approach the national or regional State aid authorities in your country regarding the applicability of the “de minimis” regime for your concrete project.

22. Depending on the concrete outcome of the current consultation the revised General Block Exemption Regulation (GBER) (likely to be adopted before the summer of 2014) might make your life much easier as to the assessment of State aid provided your project focuses on a white area. Hence, verify the new rules if your project will start in the second half of 2014 or later.

23. As an alternative to a notification under the Broadband Guidelines, you can also receive State aid approval for broadband projects under the Regional (State) aid Guidelines. While the Regional aid Guidelines reflect the spirit of the Broadband Guidelines, they may often be easier to implement. So you should carefully consider if you may wish to choose the Regional aid Guidelines as the legal base for State aid to broadband.

Other types of support

24. You might be able to lower civil engineering costs of broadband deployment: Whenever civil engineering works are carried out in your area (e.g. for purposes of gas, water, or electricity provision) you therefore should take the opportunity to coordinate such activities and to deploy ducts. If a public entity is digging anyhow and broadband and utility providers such as water or gas companies take the opportunity to place their ducts (at their own costs) it normally does not fall under the scope of State aid. But State aid rules apply if the work is done specifically to build broadband ducts

25. Moreover, you might be able to actively improve demand side conditions. One potential form of demand side support is the use of vouchers, either to cover (part of) the end users’ costs of installation or purchase of broadband devices, or of the monthly subscription. In case you want to use this instrument you first should check whether you fall under the “de minimis” rule. Alternatively, vouchers for SMEs might be block exempted as SME aid or aid to innovative enterprises. If this holds true of your broadband project you are likely to be fine because there are no further State aid requirements you need to meet In order to be on the safe side you should approach a suitable institution in your country and ask them to check your envisaged measure for legal certainty.

Efficient execution of your broadband project

26. You should inform yourself at the very beginning of your project on the relevant information sources in your country (e.g. the National Regulatory Agency; the relevant Ministry; respective broadband competence centers; managing authorities for regional

funds) and their websites. Equally helpful is the list of past broadband State aid decisions (see Annex A-1), and a broadband investment Guide with a wider focus than the present State aid Guide available on the website of the Regional Department of the European Commission (DG Regio). In any case, ask the national information sources whenever you need support first; they will help you.

Acronyms and terminology

AAA	Authentication, Authorization, Accounting.
ADSL/ADSL2	Asymmetric Digital Subscriber Line (version 2); the most common technology for providing consumer broadband services over copper telephone lines.
Backhaul network	The part of the broadband network which constitutes the intermediate link between the backbone network and the access network and carries data to and from the global network.
BDUK	Broadband Delivery UK.
Bitstream access	Wholesale access provider installs a high-speed access link to the customer premises and makes this access link available to third parties.
CMTS	Cable Modem Termination System; see Annex 3 and Section 2.1.
DAE	Digital Agenda for Europe.
Dark fibre	Unlit fibre without transmission systems connected.
DBO	Design, Build, Operate.
DOCSIS 2.0/Euro DOCSIS3.0	Data Over Cable Service Interface Specification (version 2/3); see Annex 3 and Section 2.1.
DSL	Digital Subscriber Line; family of standards for providing broadband access over copper telephone lines.
DSLAM	Digital Subscriber Line Access Multiplexer; a DSLAM is a network device that is commonly provided by telecommunications operators; it connects multiple costumer digital subscriber lines to the network.
Duct	Underground pipe or conduit used to house (fibre, copper or coax) cables of a broadband network.
EAFRD	European Agricultural Fund for Rural Development.
EIB	European Investment Bank.
EPEC	European PPP Expertise Centre.
ERDF	European Regional Development Fund.
EU	European Union.

FTTx	Fibre to the “x”; x = B, C, H, N; see Annex A-3 and Section 2.1.
FTTB	Fibre to the Building; a network reaching the end-user’s building with fibre, i.e. fibre is rolled out to the building, but copper, coax or LAN is used within the building..
FTTC	Fibre-to-the Cabinet; in a telephony network the existing copper infrastructure between MDF and the street cabinet is overbuilt or replaced by fibre, leaving the final connection between cabinet and end user still being copper. FTTC usually is equipped with VDSL technology.
FTTH	Fibre to the Home network, which reaches the end-user premises with fibre, i.e. an access network consisting of optical fibre lines in both the feeder and the drop segments of the access network (including in-house wiring).
FTTN	Fibre-to-the node; the fibre is terminated in a street cabinet up to several kilometres away from the customer premises, with the final connection being copper (in FTTC/VDSL networks) or coax (in the cable/DOCSIS 3 network). Fibre-to-the-node is often seen as a temporary, interim step towards full FTTH.
GB	Gigabyte.
GBER	General Block Exemption Regulation.
Gbps	Gigabit per second (1,000 Mbps).
GDP	Gross Domestic Product.
GIS	Geographic Information System.
HFC	Hybrid Fibre Coaxial; cable network based on fibre and coaxial physical transmission infrastructure; see Annex 3 and Section 2.1.
IRR	Internal Rate of Return.
ISP	Internet Service Provider.
LLU	Local Loop Unbundling.
LTE/LTE-Advanced	Long-Term-Evolution (Advanced), the newest 4G standards for wireless communication of high-speed data; see Annex A-3 and Section 2.1.
Mbps	Megabit per second (one million bits per second).
MDF	Main distribution frame; see Annex A-3.

MDU	Multiple Dwelling Unit, i.e. a building comprising several/many homes.
MEIP	Market Economy Investor Principle.
NGA	Next Generation Access*:* Access networks which rely wholly or partly on optical elements and which are capable of delivering broadband access services with enhanced characteristics as compared to existing basic broadband networks.
NGN	Next Generation Network; see Annex A-3.
NPV	Net Present Value.
NRA	National Regulatory Authority.
NUTS	Nomenclature des Unités Territoriales Statistiques.
OJ	Official Journal of the European Union.
PSTN	Public Switched Telephone Network; see Annex A-3.
SGEI	Service of General Economic Interest.
SME	Small and Medium-sized Enterprise.
TFEU	Treaty on the Functioning of the European Union.
UMTS	Universal Mobile Telecommunications System.
VDSL/ VDSL2	Very High Speed Digital Subscriber Line (version 2); see Annex A-3 and Section 2.1.
WiMAX	Worldwide Interoperability for Microwave Access; see Annex A-3 and Section 2.1.
WLAN	Wireless Local Area Network; see Annex A-3 and Section 2.1.
4G	Fourth-generation mobile communication standard; see Annex A-3 and Section 2.1.

1 Introduction

1.1 Background

It is a truism that we live in an era in which broadband based communications grabs deeper and deeper into the everyday life of citizens and businesses alike. Migration towards high bit rate broadband is a key issue on a world wide scale. In Europe, the European Commission's **"Europe 2020 Strategy"** underlines the importance of broadband deployment and availability as part of the EU's growth strategy for the coming decade and sets ambitious targets for high bit rate broadband development. Moreover, many Member States have already formulated their own broadband strategies.[1]

A rich suite of studies have analysed both the rationale for broadband investment and the economics of broadband deployment. Notwithstanding the fact that these studies differ in many ways, e.g. as to the geographic scope and the time horizon of the data, there are two results that are undisputable.

First, **investments in broadband infrastructure give rise to fundamental benefits** which accrue on a local, but also on a sectoral and macroeconomic level. In a nutshell, broadband connectivity is the basis of communication anywhere, at any place and at any time and, thus, impacting e.g. individual communication patterns, the way how we work, processes and productivity within companies, and interrelationships between companies. Moreover, it also brings about completely new value chains, companies, products and services. It is of strategic importance for growth and innovation in all sectors of the economy and for social and for territorial cohesion.[2] The need for broadband communications will in all likelihood speed up in the future and, thus, become even more important and potentially also more disruptive than today. Indeed, demand for capacity-intensive services is expected to increase in the future, as cloud computing, a more intense use of peer-to-peer technologies, social networks and video on demand services will develop further.

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1 See also European Commission (2012): Commission Staff Working Document on the Implementation of National Broadband Plans; SWD(2012) 68 final/2; Corrigendum, Brussels, 23.3.2012; available at: http://ec.europa.eu/information_society/newsroom/cf/itemdetail.cfm?item_id=7948.

2 The Digital Agenda for Europe (DAE) - one of the flagship initiatives of Europe 2020 – underlines the socio-economic benefits of broadband, highlighting its importance for competitiveness, social inclusion and employment and it makes clear that the achievement of the Europe 2020 objective of a smart, sustainable and inclusive growth depend in particular on the provision of widespread and affordable access to high-speed Internet infrastructure and services. Both "Europe 2020" and the DAE have specified the following objectives: (i) basic broadband should be brought to all Europeans by 2013 (ii) all Europeans should have access to much higher Internet speeds of above 30 Mbps by 2020, and (iii) 50 % or more of European households should subscribe to Internet connections above 100 Mbps. See European Commission (2010): Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, COM(2010) 245 final, A Digital Agenda for Europe; available at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0245:FIN:EN:PDF.

Second, notwithstanding the particularities in terms of socio-demographic, socio-economic, and topological features that are characterizing a concrete geographic region, and, thus, being important factors for the concrete business case in the region, **there may not be sufficient incentives for broadband deployment under pure market conditions**. Otherwise stated, the inherent cost structure of broadband deployment is such that there are more or less large regions within a given country (in particular those with a low population density) that lack and will lack in the future a ubiquitous roll-out of (superfast) broadband infrastructure if potential investors have to base their business case solely on market terms (e.g. regarding the risk valuation and capital costs). To put it another way: A substantial number of citizens and companies do not have sufficiently fast broadband at their disposal, because there is a form of market failure regarding broadband deployment. Apart from the customers and the existing market participants there may therefore be the need for "the State" as a vital third partner using public funds to support broadband deployment without crowding out private investment.

1.2 Aim of this Guide

The present Guide is targeting on you as a **public sector decision maker** to help you deploy broadband faster and easier. We anticipate that you have already come to the conclusion that the current status of broadband infrastructure deployment and the provision of broadband services, respectively, in your area requires to be improved. There might be a multitude of reasons for this decision, e.g. to secure or increase the competitiveness and innovation potential of your region, to provide sufficient job opportunities for young people, to prevent relocation of economic activity, stabilize and improve prices of real estate and to attract investments. The challenge you are facing therefore is organizing and financing a suitable best-quality and affordable broadband infrastructure. We take for granted that you have already gathered some background information on technological, economic, social, political, and regulatory aspects surrounding the "broadband" topic and that you therefore have at least a vague understanding of the challenges ahead related to the deployment of infrastructure suitable for broadband communication. The **present Guide** then **aims at illuminating specific requirements** that might become **relevant for your concrete broadband project**. Indeed, while driving and supporting your broadband project you have to take into account that **your activity** might be classified as **"State aid",** could have **competition policy concerns**, and might need **approval by the European Commission**.

One of your first tasks should therefore be to examine which is the most suited, simple and fast way to go ahead, be it outside the Broadband Guidelines (see Chapter 5 of this Guide) or under the Broadband Guidelines (Chapter 3 and 4). As a rule of thumb, the smaller your project is, the more likely you will find the best solution in Chapter 5 or under an already approved scheme. You should therefore **check** whether there is

already a **program** initiated by your national government or another entity on a lower jurisdictional level **in your country that is approved with regard to State aid**.[3] If your specific project fits into the rules and requirements of the respective program State aid issues should no longer be your concern. Furthermore, your area might be covered by a **measure approved and co-financed under the "Regional aid Guidelines"[4] or "block exempted"[5]**. Normally you should contact the relevant ministry or broadband competence centre in your country to find out. As a rule, it is the Member States at central level which contact the European Commission's Competition Directorate General, so typically you will get first information whether your region or city will fall under such measures on a national level, and if need be the national ministry will contact the European Commission for further information.

If, however, there is no such program or regional measure and you intend to support broadband deployment you should become familiar with the principles and requirements of State aid regulation. The present document aims at making your life easier as regards State aid in the context of broadband, i.e. we want to guide you to understand the respective formalities, measures and instruments. In a nutshell, our **objective** is to **explain the Broadband Guidelines** published by the European Commission in January 2013[6] **in non-technical terms** and to **provide practical examples as well as best/good practice**. The present Guide should therefore enable you to have a comprehensive understanding of the different steps and the time line of a State aid examination carried out by the European Commission. Of course, we are aware that it will not be possible to address all of the specific questions that arise in the context of a specific broadband project and give suitable and sufficiently detailed answers in this Guide. We therefore strongly advise you to **ask the respective information sources in your country** (e.g. broadband competence/coordination/… centres on a national and/or regional level) whenever you feel this is pertinent regarding the concrete issue in question.

Together, our Guide and the advice from the information sources within your country should enable you to go ahead quickly with your broadband project. In addition, you can also find relevant information in the European Commission's "Guide to broadband investment".[7]

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3 The European Commission permanently updates its website of State aid broadband decisions. You can find the respective link to this website in Annex A-1.

4 See Section 5.2.4.

5 See Section 5.2.3.

6 See European Commission (2013a): Communication from the European Commission, EU Guidelines for the application of State aid rules in relation to the rapid deployment of broadband networks (2013/C 25/01); OJ C 25/1; 26.1.2013; available at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2013:025:0001:0026:EN:PDF.

7 This Guide aims at giving advice to public authorities "on the strengths and weaknesses of different models of investment in high speed internet infrastructures and on the technological, regulatory and policy issues that are at stake in the case of each of these models." See European Commission (Regional Policy) (2011): Guide to broadband investment - Final report; September; available at: http://ec.europa.eu/regional_policy/sources/docgener/presenta/broadband2011/broadband2011_en.pdf.

Structure of the document

Chapter 2 of this Guide focuses on technologies and business models that you should reflect in your decision making. Chapter 3 illuminates why the Broadband Guidelines are relevant for you and what are their key elements. Chapter 4 highlights the criteria applied by the European Commission to evaluate a broadband State aid case. Chapter 5 addresses support measures for your broadband project outside the approval under the Broadband Guidelines, which can often be the easiest and fastest way forward. Finally, Chapter 6 aims at giving you advice how you should proceed to get your broadband deployment going. Moreover, there are 4 Annexes: Annex A-1 provides the link to the European Commission's web site regarding broadband State aid decisions. Annex A-2 contains useful addresses. Annex A-3 provides an overview of broadband access technologies. In Annex A-4 we highlight the key criteria securing that a broadband deployment activity is "proportional".

The Guide is expected to be updated early 2014, please check here http://ec.europa.eu/regional_policy/index_en.cfm.

2 I want to deploy (more) broadband infrastructure within my area: Which technologies should I reflect in my decision making? What are potential business models for my project?

A key issue for your broadband deployment plan is the choice of a suitable access technology. Chapter 2 presents an overview and rough evaluation of the choices you have. Moreover, we refer to the potential business model you might use as to the operation of the network and the provision of end user services, respectively.

2.1 Your technological choices

Annex A-3 contains an overview of the most relevant broadband access technologies and their key characteristics and performance features. Overall, we address

- Wireline technologies: FTTC, FTTB, FTTH, DOCSIS/HFC based cable,
- Wireless technologies: Mobile technologies, Fixed Wireless Access technologies, LTE advanced, and
- Satellite technologies.

Of all the aforementioned technologies capable of providing broadband access services **FTTH infrastructure** is the most advanced investment you can make: It is able to reach very high bandwidths in the Gbps region; it is future-proof as to technological performance and upgradeability; its „physical lifetime“ is „long“ (at least more than 40 years); the environmental sustainability is “high” (i.e. there are no emissions); energy consumption is relatively “low”; by definition no concerns as to electromagnetic distortions can arise; and the maintenance is relatively simple. It is, however, also obvious that deployment of this technology requires the highest investment outlays. **DOCSIS** enabled cable infrastructure by definition is a shared use technology; however, upgrading of this technology within a given geographical footprint - in order to deliver higher bandwidths in keeping with the actual demand behavior - is relatively easy and can be materialized at incremental costs. Deployment of **FTTC/VDSL**, enriched by vectoring technology, is capable of delivering bandwidths that are likely to be sufficient for normal residential users for the near future. It risks, however, to become insufficient if the internet traffic increases, and might already be too slow for business users. **LTE** will definitely support basic broadband access and to some extent also fast Internet access. It will, however, not support ultra-fast NGA. Yet, technological progress is dynamic in these fields and „**LTE advanced**”-technology will bring about a substantial increase in bandwidth. **WLAN and WiMAX** are wireless technologies which in principle allow ultra-fast broadband speeds. Yet, they are only able to offer these speeds to a handful of customers communicating in parallel, not for the mass market. Even fast broadband cannot be supported for a relevant amount of customers. For mass market usage and in dense populated areas (e.g. in cities) these

technologies also require a dense network of base stations, thus exhibiting severe challenges for profitability. **Satellite broadband** on the one hand is a relatively cheap and easy to install solution which in particular has its merits for remote and/or topographically challenging areas. On the other hand, you should be aware of relatively high signal delay times and limited available bandwidths, i.e. satellite technology does not support ultra-fast NGA.

Overall, there are many broadband technologies available for your concrete project. You should, however, be aware that it is not possible to circumvent State aid considerations by choosing a particular technology, rather, the State aid rules are technology neutral.

To get a first impression on the **actual implementation status of** the **different broadband technologies** across European countries, you might wish to have a **look at the** regular **broadband coverage studies** carried out on behalf of the European Commission.[8]

2.2 What are potential business models for my project?

Having sorted out the technological issues another crucial issue is related to the way how you want to make use of the broadband infrastructure after its completion and position your venture in the market.

You should be assured from the outset that there is **no single business model that suits every situation**. Rather, **each model has** its **advantages and disadvantages** and it depends on your concrete circumstances and conditions which model finally is appropriate. Subsequently we outline examples of business models that might meet also your requirements[9]. This section does, however, not yet address whether and under which conditions State aid considerations come into play.[10]

Bottom-up (or local community) model

This approach focuses on a group of end users in your area organising themselves into a jointly owned and democratically controlled group. Such a **group** could e.g. be **organized as a co-operative**. In the bottom-up model the group of end users is

8 The most recent study carried out by Point Topic for the European Commission contains data for the year 2012, see European Commission (2013d): Broadband coverage in Europe in 2012, Final Report; available at: http://ec.europa.eu/digital-agenda/en/news/study-broadband-coverage-2012.

9 For more information see Annex 1 of the State aid Guidelines and European Commission (Regional Policy) (2011): Guide to broadband investment; op.cit. The latter currently is updated, in particular regarding business models, and it is expected to be published early 2014. Have a look at: http://ec.europa.eu/regional_policy/index_en.cfm.

10 Information on such conditions is provided in particular in Chapter 3 and 5 of the present document.

overseeing the contract to build and operate the own local network. An example of such a model is OnsNet Nuenen in the Netherlands.[11]

Private design, build and operate (DBO) model

In this case you are funding a private sector organisation. The latter is assisting you in the deployment of a new network. Virtually, you have no specific role in the ownership or operation of the network. Yet, you may impose obligations in return for the funding. An example which very often is used in broadband State aid cases is **gap funding**, i.e. you are awarding direct monetary grants to broadband investors to build, manage and commercially exploit the broadband network and to cover the gap between the investment costs and the expected profits. Such grants normally involve State aid within the meaning of Art. 107(1) TFEU, see Section 3.1.

Public outsourcing model

This model is characterized by a **single contract** that is **awarded for all aspects of the construction and operation of the network**. The network is run by the private sector, i.e. you neither want to operate the network nor do you want to offer end user services. You retain, however, ownership and you might still have some control of the network. An example is if you are funding the roll-out of the broadband network and it remains in public ownership, however, the broadband network is managed by a concessionary selected through a competitive tender procedure which exploits the network at the wholesale level. Also in this case, as the network is constructed with a view to its exploitation, the measure may constitute State aid.

Joint venture

In this case you enter into an agreement by which you are **splitting the ownership of the network between a private sector entity and your institution**. You might leave construction and operational functions to be undertaken by your private sector partner. You might, however, also provide "support in kind", e.g. broadband passive infrastructure by carrying out civil engineering work (digging, etc.) and/or by providing ducts or dark fibre.

Public design, build and operate (DBO) model

In a public DBO model **you keep owning and operating the network without any private sector assistance**. Moreover, you are managing all aspects of network deployment. Your organisation (or another public sector operating company) may operate the entire network, or may only operate the wholesale layer only (with private

11 See http://www.connuenen.nl/.

operators offering retail services). An example of such a model is the RAIN project in Lithuania.[12]

Apart from the bottom-up model, all of the other models rest on a "public private partnership (PPP)" approach although they are based on differing levels of involvement, commitment and retained risk by the public sector. Case studies for all four PPP funding mechanisms are presented in the EPEC (2012) brochure.[13]

12 See European Commission, Regional Policy, Including rural Lithuania in the broadband world, available at: http://ec.europa.eu/regional_policy/projects/stories/details_new.cfm?pay=LT&the=45&sto=2265&lan=7&region=ALL&obj=ALL&per=2&defL=EN.

13 See European PPP Expertise Centre (EPEC) (2012): Broadband - Delivering next generation access through PPP; available at: http://www.eib.org/epec/resources/epec_broadband_en.pdf.

3 Why are the Broadband Guidelines relevant for me? What are their key elements?

Chapter 3 highlights the background of State aid concerns and it provides an overview of key elements of the Broadband Guidelines.

3.1 What is "State aid"? Why such regulations and norms? Who decides whether a measure has to be viewed as "State aid"?

One of the cornerstones of the European Union is the pursuit of an internal market for goods and services. Thus, compatibility with internal market requirements is a key building block of competition policy in Europe. A **guiding principle** is that **any State intervention** should **limit** as much as possible the **risk of crowding out or replacing private investments**, **of altering commercial investment incentives** and ultimately **of distorting competition** as this is viewed as contrary to the common interest of the European Union.

In this context, Art. 107(1) TFEU specifies that *"any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods shall, in so far as it affects trade between Member States, be incompatible with the internal market."* Thus, those public interventions are viewed as illegitimate by which an economic advantage for one or more undertaking(s) is caused, but no equivalent service in return is provided. Such distortions on the internal market must be avoided.

It follows that in order for a measure to qualify as **State aid**, the following **cumulative conditions** have to be met: (a) the measure has to be **granted out of State resources**, (b) it has to **confer an economic advantage** to undertakings, (c) the **advantage** has to be **selective** and **distort** or threaten to distort **competition**, (d) the **measure has to affect trade** between Member States.

Given your aspiration to support the deployment of broadband infrastructure State aid considerations come into play inasmuch as it needs to be ensured that public funds are carefully used and that your aid is complementary and does not substitute or distort investments of market players. In principle, your envisaged broadband deployment activity should be targeted at market failures. State aid may be used to obtain a more desirable, equitable market outcome, e.g. by contributing to a reduction of a 'digital divide' between your area and other areas regarding an affordable and competitive broadband service provision.

However, if State aid for broadband were to be used in areas where market operators plan to invest or have already invested, this could significantly undermine the future incentives of commercial investors to invest in broadband in the first place. In such

cases, State aid to broadband might become counterproductive to the objective pursued. Moreover, a broadband State aid assessment seeks to ensure that implementation of technological progress is not inhibited; this might occur if a tender procedure is biased to a particular technology or a particular bidder.

The **decision whether a concrete governmental intervention is compatible or unlawful aid is taken solely by the European Commission**. Art. 108(3) TFEU therefore specifies that the European Commission shall be informed, in sufficient time to enable it to submit its comments of any plans to grant or alter aid (notification obligation).[14] You must not conclude binding contracts or pay out subsidies until this procedure has resulted in a final decision. If the European Commission comes to the conclusion that your aid is not compatible with the internal market it shall decide that you abolish or alter your aid (within a period of time to be determined by the European Commission (Art. 108(2) TFEU). **Starting your project before the final decision and getting a negative decision afterwards** therefore **might be quite harmful for you.** You run the **risk** that the **aid be recovered from the aid beneficiary**. The notification will always be carried out by the national coordinating institution responsible for notification in your country, often the ministry for economic affairs, and you should ensure to inform and consult them.

To sum up, State aid control regarding broadband aims at reconciling the conflicting objectives of fostering rapid roll-out of broadband infrastructure and limiting distortions of competition, i.e. avoiding the crowding-out of private investment. The Broadband Guidelines inform you on the European Commission's assessment of public support to broadband deployment projects.

3.2 What are possible forms of my support?

A priori there are quite a few forms of public intervention to be applied to foster broadband deployment. The following examples are of course not exhaustive, as you might be able to develop a different way of supporting your broadband project. The interventions outlined below do not specify any geographical context, i.e. they might appear at a national, regional or local level.

There are several different ways how you can directly or indirectly support the financing of your broadband project. Some examples - all of them are potentially subject to State aid approval - might illuminate this.

First, you might qualify for **funding from European funds** such as the European Agricultural Fund for Rural Development (EAFRD) and/or the European Regional

14 In Chapter 5 we provide an overview of situations where notification is not necessary.

Development Fund (ERDF).[15] Normally this requires co-funding from the Member State.

Second, you might support your broadband project via a "**direct grant**". In this case you should have properly specified your project and the terms and criteria for selection of an entity whom you will fund. You might e.g. award a direct monetary grant to an entity to build, manage and commercially exploit your envisaged broadband network. In such a case, the challenge for you is to determine the proper amount of the grant. Indeed, it is in your self-interest that you avoid a situation in which your grant is too "high" (i.e. you run the risk of financing an inefficient deployment) or too "low" (i.e. you run the risk that no market participant is willing to submit a bid for your project). One effective way to meet these challenges is to use a competitive tender, another is to use reimbursable advances/grants, which may require paying back some of the aid in case of an outcome which was less costly or more profitable than expected. Such grants normally involve State aid.

Third, you might use "**tax rebates**". Such an approach inherently presupposes that your institution has the legal power to raise taxes, which is typically not within the competence of the regional decision maker this Guide aims at.[16]

Fourth, you might arrange a "**soft loan**" or a "**guarantee"**. Both approaches are targeted on using the solvency of your organisation to improve the credit terms offered by a third party. By virtue of a "soft loan" you arrange a loan with a below-market rate of interest. In case you grant a "guarantee" for the broadband project in question you improve the risk assessment of the project by a "third party" (e.g. a bank) allowing the latter to finance your broadband project. Smaller loans or guarantees might fall under "de minimis" (see Section 5.2.2), but as local decision maker you should contact your national State aid support institution to be sure that the loan/guarantee do not collide with State aid rules.

Fifth, you might consider to provide particular „**physical resources**" you are owning to third parties which are necessary inputs for broadband deployment. An example of such an "in-kind" transfer of resources are ducts. You might provide them below market prices; you might, however, also provide them as in-kind capital contribution to a jointly owned entity. Such an "in-kind" financing does, however, not necessarily eliminate the aid. All of the aforementioned measures often involve State aid and therefore must be notified to the Commission.

Sixth, you might support the financing conditions for a broadband project by your public procurement policy, i.e. if your institution becomes an "**anchor client**" of an entity that is

15 You can get more information on regional (State) aid in Section 5.2.4.

16 See, for instance, European Commission Decision N 398/05 — Hungary, Development Tax Benefit for Broadband; case number 16 in the list of decisions mentioned in Annex A-1.

deploying broadband infrastructure in your area. Such an approach might also entail State aid.[17]

3.3 What does the distinction between "basic broadband" and "NGA" specified in the Broadband Guidelines mean? What is an "NGN" investment?

For the purpose of State aid assessment, the Broadband Guidelines distinguish basic broadband and NGA networks. The rationale for this distinction is straightforward: basic broadband networks are based on the existing fixed or wireless networks whereas NGA networks represent new infrastructures with characteristics that enable new services and quality features.

Several different technology platforms provide **basic broadband access services** including asymmetric digital subscriber lines (up to **ADSL**2+ networks), **non-enhanced cable** (e.g. DOCSIS 2.0), **mobile networks** of third generation (**UMTS**) and **satellite systems**. At the end of 2012, only 5% of households in the European Union were not able to subscribe to at least one fixed basic broadband connection, and almost all European households could buy a basic broadband connection via satellite.[18]

As to NGA networks, the Broadband Guidelines do not contain any quantitative definition. Rather, they stipulate that at the current stage of market and technological development, NGA networks are access networks which rely wholly or partly on optical elements and which are capable of delivering broadband access services with enhanced characteristics (e.g. regarding speed) as compared to existing basic broadband networks. [19]

At the current stage of market and technological development, **NGA networks** therefore are:

- **Fibre-based access networks**; this includes FTTB and FTTH; it might also include FTTC/VDSL vectoring access technology moreover, there might be cases in which also FTTC/VDSL can be considered as NGA (see Section 2.1 and Annex A-3);[20]

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17 More information and examples as to this approach can be found in Section 5.1.1**.**

18 See European Commission (2013d): Broadband coverage in Europe in 2012, op. cit.

19 NGA networks are understood to have at least the following characteristics:
- deliver services reliably at a very high download speed per subscriber through optical (or equivalent technology) backhaul sufficiently close to user premises to guarantee the actual delivery of the very high speed;
- support a variety of advanced digital services including converged all-IP services; and
- have substantially higher upload speeds (compared to basic broadband networks).

20 As the speed declines with the length of the copper cable, both for FTTC and for vectoring technology it needs to be carefully assessed if it can be considered an NGA solution *in rural areas*. This argument also underlines that it may be a particular challenge for you to substantiate the "step change" in terms

- **Advanced upgraded cable networks** (HFC/DOCSIS 3.0; see Section 2.1 and Annex A-3);
- Certain **advanced wireless access networks** capable of delivering reliable high speeds per subscriber (see Section 2.1 and Annex A-3).

Yet, the Broadband Guidelines acknowledge that other technologies may be included in the future. This is typically implemented through case practice and respective European Commission decisions, but as the local decision maker this Guide is targeted at, you may not be the first one to deploy very innovative solutions with complex State aid implications.

In order to improve the broadband availability in your area you might also decide to **support measures focusing on the backhaul network**. As outlined in Annex A-3, such an investment related to a "Next Generation Network (NGN)" might very well make sense as the latter is a **necessary input for telecommunication operators to provide access services to the end-users**. If you invest in NGN infrastructure you can leave the (investment) decision on the type of 'last mile' infrastructure to the telecommunication operator(s) wishing to connect to the backhaul network. However, you should also be aware that the last mile is typically the most expensive element of broadband deployment, so while an investment in a backhaul network clearly facilitates last mile investment and increases speed, it does not automatically guarantee follow up investments. Nevertheless, additional (separate) aid measures could be undertaken to help bridging the last mile, too.

3.4 What does the distinction of deployment areas in white, grey, black areas mean?

The Broadband Guidelines are based on a classification of your area according to its existing or expected future broadband infrastructure deployment situation (within a time horizon of the next three years). To this end, the colours "white", "grey" and "black" are used to define the market situation in your area more concretely both for basic and for NGA broadband networks.

Basic broadband networks

White areas: In *white* areas **no provider of broadband access services currently** is operating and there is **no such provider to be expected in the coming three years** either. In this case, a public intervention is likely to be in line with the common interest and therefore State aid is likely to be compatible. But, one should have in mind, that a white area by definition means that *no* carrier is willing to deploy infrastructure in the next three years. If you intend to conduct a public measure you have to verify this.

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of broadband availability required by the Broadband Guidelines if you are focusing on vectoring technology; see Section 4.2.

Should such deployment measures be communicated by any operator, the area is no longer perceived to be „white“.

***Grey areas*:** In *grey* areas there is **one provider already active**, however, **another network is unlikely to be developed in the next three years**. In a *grey* area a more detailed analysis and a thorough compatibility assessment will be necessary. As to the notion of “provider” it is important to note that the **competitive situation is assessed according to the number of existing *infrastructure-based* operators**. If there is only a single infrastructure-based operator, however, several retail providers are active in your area using this infrastructure network (e.g. on the basis of Local Loop Unbundling (LLU)) your area can still be considered as grey. Nonetheless, even though your area can be considered as grey, the existence of competing access-based operators might be viewed as an indication that there is no market failure. In such a case, you therefore have to provide a convincing proof of access problems or quality of service in your area.

Black areas: In *black* areas **there are or there will be in the next three years at least two basic broadband networks of different operators**. Broadband services therefore are provided under competitive conditions (infrastructure-based competition) and it can be assumed that there is no market failure. Accordingly, there is very little scope for State intervention to bring further societal benefits by subsidizing another basic broadband network. Still, **giving State aid to an NGA network is possible in black basic broadband areas**, provided this **classifies as 'step change'**. Thus, in order to set up a broadband project in a black area which meets the criteria of a State aid assessment there needs to be a clearly demonstrated market failure; such a situation can only be expected under exceptional circumstances.

NGA networks

***White NGA areas*:** The area in which you want to deploy NGA broadband infrastructure is considered to be a “*white NGA*” area if **no such NGA network at present exists and is not likely to be built within the next three years by private investors**. In this case your area is in principle eligible for State aid to NGA provided you can substantiate the “step change” in terms of broadband availability required by the Broadband Guidelines; see Section 4.2.[21] Broadband deployment in white NGA areas are likely to be affected by the revised General Block Exemption Regulation, see Section 5.2.3.

***Grey NGA areas*:** Your area is considered to be a “*grey NGA*” area if **only one NGA network currently is in place or is being deployed in the coming three years and there are no plans by any operator to deploy a further NGA network in the coming three years**. Under such circumstances the European Commission will carry out a more detailed analysis in order to verify whether State intervention really is needed. In

21 In case the white NGA area is a black area regarding basic broadband infrastructure it is particularly important to demonstrate clearly the step change provided by the envisaged new infrastructure. To give an example: If there exist already two ADSL-based networks providing a bandwidth of, say, 15-25 Mbps it is unlikely that a third network providing, say, 30 Mbps will add much.

order to have a sound expectation as to whether one or more other network investors could deploy additional NGA networks in your area, you should assess the degree to which existing regulatory or legislative measures in your country have lowered barriers for such network deployments (e.g. regarding access to ducts and sharing of infrastructure). You can take for granted that the deployment of a second broadband infrastructure which is to compete with the existing one as such is not a sufficient argument to accept your aid. Rather, you have to **substantiate a "step change"** (see Section 4.2), i.e. the second network needs to provide a substantial improvement in terms of e.g. competitive prices and higher speeds.

***Black NGA areas*:** In a "*black NGA*" area **at least two NGA networks of different operators already exist or they will be deployed in the coming three years**. In this case, you risk that the Commission will conclude that your support for an additional publicly funded, equivalent NGA network is incompatible with the internal market targets outlined in Section 3.1. In practice that means that the project is either modified or withdrawn. Prohibition decisions for broadband State aid are, however, extremely rare.

Yet, there might be an **exception** for your concrete project: your **intervention** could be **allowed if** your **NGA network is able to provide ultra-fast speeds well above 100 Mbps**.[22] However, such an intervention could only be allowed in case of a 'black NGA' area, if the **'step change' required** (see Section 4.2) is substantiated.[23]

22 As we have already outlined in Section 1.1 one of the goals of the Digital Agenda for Europe is that by 2020, 50 % or more of European households should subscribe to Internet connections above 100 Mbps; see European Commission (2010), op. cit.

23 The following cumulative criteria apply for aid to ultrafast networks in black NGA areas:

- The existing NGA networks and those planned for the next 3 years do not reach the end-user premises with fibre networks; this is e.g. the case if the ultimate portions of the network are still based on copper.
- The market situation is not evolving towards the achievement of a competitive provision of ultra-fast services above 100 Mbps in the near future by the investment plans of commercial operators. An example might help to clarify this: Suppose an area where there is an FTTC network and an upgraded cable network (at least DOCSIS 3.0). In such a case it is plausible to consider the market to be competitive enough to be able to evolve towards the provision of ultra-fast services without the need of public intervention.
- There is expected demand for such qualitative improvements.

One crucial condition therefore is to substantiate that there are higher performance needs in your area compared to what commercial investors are willing to offer in the near future. A State aid notification regarding an ultrafast network requires specialist knowledge and thorough preparation. Therefore local decision makers should imperatively contact their State aid contact point at the national level.

4 Which criteria are applied by the European Commission to evaluate a broadband State aid case?

The European Commission will apply a set of well-defined criteria to evaluate your (potential) State aid case. First, every State measure in support of broadband deployment has to meet specific "compatibility principles" described below in Section 4.1. Second, your project should bring about a "step change" as to the status of broadband provision (Section 4.2). Third, a suite of necessary conditions must be fulfilled to demonstrate the proportionality of your measure (Section 4.3 and Annex A-4).

4.1 The „compatibility" conditions and the balancing test

The **overarching decision** to be made when assessing your broadband project is whether the **positive impact of** your **aid measure outweighs its potential negative side effects**, such as distortions of trade and competition. This exercise is conducted in two steps. First, every aid measure has to comply with the compatibility conditions outlined below. Meeting these principles is necessary, i.e. failure to comply with one of the conditions will result in declaring the aid incompatible with the internal market. Second, if all necessary conditions are met, the European Commission balances the positive effects of the aid measure against the potential negative effects ("balancing test"). Just as a reminder, in Chapter 5 we are presenting broadband related measures not constituting State aid and also measures constituting State aid but for which no notification is required. In effect, there might exist alternative solutions for you which will often be a simpler choice.

4.1.1 Your measure should achieve an "objective of common interest"

The focus here is on the assessment **to what extent** your planned **measure will contribute to the achievement of the objectives** of common interest laid out in the **Digital Agenda for Europe** (DAE).

4.1.2 Your measure should address a "market failure"

In general, economists speak of a "market failure" if a market, left to its own devices, fails to deliver an efficient outcome for society. As to broadband, you might live in an area where investments in infrastructure are not being undertaken (to a degree that is appropriate) even though the economic benefits for society exceed the cost. Otherwise stated, the availability of a(n upgraded) broadband network in your area might pave the way for the provision of more services and for innovation, i.e. it might bring about so called '**positive externalities'**. In such a case, it is therefore likely that more people benefit from your intervention than the immediate investors and subscribers to the network. The **granting of State aid** therefore **may produce positive economic effects**. **Another** possible **objective** of common interest might be related to **equity**.

You may choose to intervene in the market because you want to **correct social or regional inequalities** generated by the current market outcome. Under certain circumstances, State aid for broadband may also be used to achieve such equity objectives.

4.1.3 Your measure should be “appropriate” as a policy instrument

In order to ensure that your measure is properly designed, the balancing test requires that State aid is an *appropriate* policy instrument to address the problem. It is highly likely that there are certain geographic areas in each country in which the supply of (an appropriate level of) broadband services may not be reached under pure market terms because the inherent profitability of investment is too low. What could be potential forms of intervention to meet such a challenge? First, one might think of (ex-ante) regulation of the telecommunications sector. Second, demand-side measures might be in favour of broadband provision (see Section 5.3.2). Third, spectrum (re-)allocation might lead to a possible network roll-out. All of these measures are capable of bringing about positive incentives for an additional network roll-out. Yet, often they will not be sufficient to solve the lack of broadband and reach an envisaged level of supply. Hence, your **broadband measure** might be **appropriate if there is no alternative to public support to overcome the lack of broadband connectivity**.

4.1.4 Your measure should have an “incentive effect”, be limited to the minimum necessary, entail limited negative effects, and be “transparent"

As to the **incentive effect** of your planned broadband project, the **issue** at stake is **whether the investment would not have been undertaken within the same time frame without any State aid**. Such a question will become particularly important if the network construction works have been initiated before public financing is applied for. In case an operator is subject to certain obligations to cover your specific area, it may not be eligible for State aid, as your intervention is unlikely to have an incentive effect. An example is, if coverage targets included in license conditions of mobile LTE (Long Term Evolution) or LTE advanced operators apply in particular to your area. Similarly, if there is an operator designated with a universal service obligation, thus receiving public service compensation, no additional State aid can be granted to finance the same network.

Your broadband related market intervention should be “**proportional**”. The assessment of your project therefore will in particular focus on the **fulfillment of a number of necessary conditions to minimise the State aid involved and the potential distortions of competition**. These conditions are explained in more detail in Section 4.3 and Annex A-4.

Your broadband project might have negative effects on competition and trade. Two examples might illuminate this. First, competitors might see the profitability of their prior investments decreasing because of the aid. Thus, they may decide to reduce their own future investment or even withdraw from the market altogether. Second, the aid beneficiary - to be chosen following a competitive selection process, see Section 4.3 and Annex A-4 – might be an undertaking already dominant on the market or may become dominant due to your investment. Overall, **your project should only have a limited negative effect on competition**.

An important requirement is that your aid is awarded in a transparent manner. The issue in question is in particular to **ensure** that Member States, network operators, the interested public and the European Commission have **easy access to all relevant acts and pertinent information about the aid awarded** thereunder. The details of the transparency requirements are further specified in Annex A-4.

4.1.5 Your measure should meet the overall balancing exercise and the compatibility conditions to limit the distortion of competition

As has been outlined above, your broadband measure should be designed in a way that the **overall balance of the effects of the measure is positive**. In this regard, the effect of your measure can be described as a change of activity compared with what would have happened without it. Due to your measure, a desired common interest goal should be achieved. The roll-out of new infrastructure in your area should e.g. enable to deliver additional capacity and speed on the market as well as lower prices and better choice for consumers, higher quality and innovation. Thus, the potential increase in demand in your area will contribute to the completion of the Digital Single Market and bring benefits to the EU economy as a whole.

4.2 The required “step change” in terms of broadband availability

A crucial issue for the assessment of your broadband project is whether and to what extent your network is able to ensure a “step change” in terms of broadband availability. The Broadband Guidelines define **two conditions for the presence of** such **a step change** due to the public intervention:

First, the selected bidder makes **significant new investments** in the broadband network. One example where the investments are likely not to be significant and therefore not eligible for State aid is a mere upgrade of the active components of an existing network infrastructure. Furthermore, although certain copper enhancing technologies (such as "upgrading" an existing FTTC network with vectoring) could increase the capabilities of the existing networks, they may not require investments in new infrastructure that are significant enough for a step change.

Second, the subsidised infrastructure brings **significant new capabilities** to the market **in terms of broadband service availability and capacity, speeds and competition**. The rationale for this requirement is to ensure that the use of State aid does not lead to a simple duplication of existing infrastructures. New capabilities regarding service availability, capacity and speed are e.g. likely to be present if your project focuses on an upgrade from a basic to an NGA broadband network. Likewise, certain upgrades of an NGA network such as the extension of fibre connectivity nearer to the end-user might substantiate a step change, e.g. if it entails an increase of speed from, say, 30 Mbps to 100 Mbps. On the other hand, if you plan only a small, gradual upgrade of existing infrastructures, e.g. from 12 Mbps to 24 Mbps, it is unlikely that this is seen as a step change. New capabilities of the subsidised network as to competition are e.g. unleashed if your project allows for effective (wholesale) access at different levels of the infrastructure and/or unbundling.[24]

Obviously, the general assessment of a specific situation is crucial, but as a rule of thumb the following table tries to give you a **first indication of what might be considered a step change or not**.

Table 1: Examples of a "step change" regarding broadband deployment

From	to	Step change?	Explanation
No broadband infrastructure at all	Basic broadband	Yes	At least minimum bandwidth provided for basic Internet access
No broadband infrastructure at all	Fibre to the MDF/VDSL at the MDF; FTTC/VDSL; FTTB; FTTH	Yes	Higher quality connections for users (substantial bandwidth increase); availability of a multitude of new services and therefore better choice for consumers; potential for innovation in the business sector
ADSL/VDSL at the MDF	FTTC/VDSL at the cabinet	Yes	Higher quality connections for users (substantial bandwidth increase); potential for lower prices per megabyte; potential for innovation in the business sector
ADSL/VDSL at the MDF or FTTC/VDSL at the cabinet	VDSL + Vectoring	Questionnable	Higher quality connections for users (substantial bandwidth increase); availability of a multitude of new services and therefore better choice for

24 More information on wholesale access is provided in Annex A-4 and by the National Regulatory Authority in your country.

From	to	Step change?	Explanation
			consumers; potential for innovation in the business sector. However: close scrutiny necessary to establish whether wholesale access requirement can be met.
ADSL/VDSL at the MDF	FTTB, FTTH	Yes	Higher quality connections for users (substantially higher bandwidths down- and upstream); potential for lower prices per megabyte; increased availability of services and therefore better choice for consumers; potential for innovation in the business sector
FTTC/VDSL at the cabinet	FTTB, FTTH	Yes	Higher quality connections for users (substantially higher bandwidths down- and upstream); potential for lower prices per megabyte; increased availability of services and therefore better choice for consumers; potential for innovation in the business sector

You have to address the step change issue by **comparing your planned network capabilities to those of existing as well as concretely planned network roll-outs**.

Substantiating the step change caused by your concrete measure is a **key requirement for the notification** of your project. You should be aware that it is not sufficient to just claim that there is a step change. Rather, you should take substantial effort to **demonstrate the added value of your network funded by State aid** and you must **provide concise reasons as well as sound and pertinent empirical evidence**. Dimensions worth to be addressed are e.g. the number/share of households experiencing a specific improvement due to the broadband measure, the impacts on prices (compare the relative price level for broadband access to other areas in your region), and the impact on competition.

4.3 The key criteria securing that your broadband deployment activity is "proportional"

You have already recognized that the overarching crucial issue of a State aid assessment is to limit the distortions of competition potentially induced by your measure. Against this backdrop, apart from the demonstration that a "step change" is achieved (see Section

4.2), you have to fulfill a variety of necessary **conditions to demonstrate the proportionality of your measure** encompassing

- to conduct a **detailed mapping** and **analysis of coverage** as well as a public consultation,
- to specify your tender in a **technologically neutral** manner, to base your decision on a competitive selection process, and to select the most economically advantageous offer,
- to make **use of existing infrastructure**,
- to meet certain **requirements as to wholesale access** and to take care that specific **requirements regarding wholesale access pricing** are met,
- to fulfill **specific duties regarding monitoring** of your broadband project and to be prepared that a **clawback mechanism** might apply, and
- to fulfill **specific duties** in order **to meet transparency and reporting requirements**.

These conditions are outlined in more detail in Annex A-4.

5 What are support measures that do not require a State aid notification?

There are support measures which might not require an exhaustive assessment of State aid compatibility. Such measures are presented in the present Chapter. First, we are focusing on measures not constituting State aid at all (Section 5.1). Second, we are addressing measures for which - albeit they are constituting State aid - no notification is required (Section 5.2). Third, there are additional support measures which usually do not constitute State aid (Section 5.3).

5.1 Measures not constituting State aid

Measures not constituting State aid include:

- Roll-out of a broadband network for non-commercial purposes,
- Market economy investor principle,
- A so called “Service of General Economic Interest” (SGEI).

5.1.1 Roll-out of a broadband network for non-commercial purposes

If you are constructing a network or procuring broadband services only to satisfy your own needs, such a measure - under certain circumstances - might not constitute State aid. Indeed, the European Commission has accepted in previous State aid cases[25] that **the fact that a public authority builds its own public-sector network to satisfy its needs for Internet connectivity** (instead of procuring such services from private operators) **does not entail an economic advantage for the beneficiaries** since they do not exercise an economic activity.

You might seek to build a broadband network for providing broadband access to universities, schools, public libraries, or your administrative entities located within your area. In such a case, you would launch a competitive selection process to find a project partner that establishes such a network. It is up to you to decide if your public entity or the project partner operates the network. If the partner does not use the infrastructure for service provision to third parties the measure does not constitute State aid.

You might, however, come to the conclusion that the network established for your purposes should be marketed also to third parties, i.e. outside public institutions. Such a

25 See European Commission decision in case N46/2007, Welsh public network scheme, OJ C/157/2007 (case number 25 in the list of decisions mentioned in Annex A-1), and European Commission decision in case NN24/2007, Prague Municipal Wireless Network, OJ C/141/2007 (case number 26 in the list of decisions mentioned in Annex A-1).

network opened for the use of broadband investors or operators is likely to be classified as State aid, and an **approval** of such a project is **often no problem**.

An example is the deployment of broadband infrastructure in Catalonia.[26] The measure approved by the European Commission aims at fulfilling two different objectives. The first one is the self-provision of advanced telecommunications services to public administration sites, including healthcare and education establishments, security and government bodies and libraries in different municipalities of Catalonia. The second objective pursued is the provision of wholesale access to spare capacity of the backhaul part of the network to electronic operators wishing to connect to it (in those areas of the region where such services are non-existent or inadequate).

A non-commercial network with involvement of third parties is a more complex project, please consult your national State aid contact point for further advice.

5.1.2 Market economy investor principle (MEIP)

Broadly speaking, the market economy investor principle (MEIP) states that if you are **placing capital, directly or indirectly, at the disposal of an undertaking and such support corresponds to "normal" market conditions** it **cannot be regarded as State aid**. In other words, the State should share the same risks and opportunities as a private investor, i.e. the decisive element is whether the beneficiary receives an economic advantage which it would not have obtained under normal market conditions.[27]

The European Commission has e.g. examined the application of the principle of the market economy private investor in the broadband field in a decision related to a broadband venture in Amsterdam.[28] Should you envisage to make use of the MEIP the Amsterdam decision has made clear that the conformity of your investment with market terms has to be demonstrated thoroughly and comprehensively, either by means of a significant participation of private investors or the existence of a sound business plan.

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26 See European Commission decision in case N 407/2009 – Spain; Optical fibre Catalonia (Xarxa Oberta); C(2010)5696; Brussels, 11.08.2010; case number 67 in the list of decisions mentioned in Annex A-1.

27 See Section 4.1 of Kliemann, A. and O. Stehmann (2013): EU State aid control in the broadband sector – the 2013 Broadband Guidelines and recent case practice; in: European State Aid Law Quarterly (EStAL) 3/2013.

28 See European Commission decision in case C 53/06 - The Netherlands, Citynet Amsterdam - Investment by the city of Amsterdam in a fibre-to-the home (FttH) network; 11 December 2007; case number 32 in the list of decisions mentioned in Annex A-1; OJ L 247, 16.9.2008, p. 27; available at: http://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=3_C53_2006. In the Amsterdam case, the municipality of Amsterdam invested (30%), together with two private investors and a few housing corporations into the construction of a passive optical fibre network. The network was owned and operated by a separate company, of which the municipality owns a third of the shares. The wholesale operator was selected through a tender procedure and provided open and non-discriminatory access to retail operators. See Kliemann and Stehmann, op. cit, Section 4.1.

In order to substantiate market conformity you can use available market data, benchmarking or other assessment methods. With regard to the latter you can e.g. calculate the internal rate of return (IRR) of the investment or the net present value (NPV).[29] Such a profitability analysis in particular has to include an appropriate risk factor. Where private investors take part in the project, it is a *sine qua non* condition that they would have to assume the commercial risk linked to the investment under the same terms and conditions as you do.

Kliemann and Stehmann[30] moreover underline that "**market conformity of a State intervention is examined on an *ex-ante* basis**, as any prudent market economy operator would normally carry out its own *ex-ante* assessment (feasibility study) before investing into a particular project." To clarify this and referring to European case law the authors continue: "…for the application of the MEIP principle it is not sufficient to rely on economic evaluations *after* the investment took place. In other words, whether or not the State participated as a private market investor or as 'State' had to be decided *beforehand* and cannot be invoked because some economic evaluation retroactively endorses this investment decision as profitable."

If your equity participation or capital injection does not present sufficient prospects of profitability, even in the long term, your intervention must be regarded as State aid. This needs to be done in **self-assessment** (as no notification is necessary) which of course raises your **risk of a legal challenge in case of a complaint**.

In view of the aforementioned conditions you should be aware from the outset, that **fulfilling the requirements of the MEIP is a tricky matter** and you should care for suitable advice and support to determine whether your specific circumstances might be feasible for application of this principle.

5.1.3 Service of general economic interest

Under specific conditions the deployment of broadband networks and the provision of broadband access to end users can be viewed as a service of general economic interest (SGEI).

However, normally it is not up to the local decision makers to decide alone on an SGEI status. **If the SGEI conditions are fulfilled the public financing of broadband deployment is perceived to be (1) no State aid or (2) compatible aid**.

Yet, it needs to be underscored from the outset that **getting an approval of an SGEI for your broadband project is one of the more complicated ways to proceed**. You

29 See European Commission decision SA 22668 – Spain: Ciudad de la Luz, 8 June 2012; more information available at: http://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=3_SA_22668.

30 See Kliemann and Stehmann, op. cit.

should therefore contact a relevant broadband State aid institution in your country (e.g. the national Ministry in charge of broadband issues) and/or you should get specialized advice from other sources, as explaining the specificities of SGEI goes beyond the objective of this Guide aimed at explaining the core concepts of (broadband) State aid to local decision makers.

5.2 Measures constituting State aid but for which no notification is required

Measures constituting State aid but for which no notification is required encompass:

- An already existing (national or regional) framework scheme regarding deployment of broadband infrastructures,
- "De minimis" aid,
- Block exempted aid,
- Regional aid, and again
- the "Service of General Economic Interest" (SGEI).

5.2.1 Already existing (national or regional) framework scheme regarding deployment/financing of broadband infrastructures

In many case it might turn out that your envisaged broadband project fits into an already existing framework scheme under the Broadband Guidelines within your country. Such schemes have been set up in many Member States on the national or on a lower jurisdictional level. Framework schemes for broadband development aim at ensuring coherence in the use of public funds, reducing administrative burden on smaller granting authorities and accelerating the implementation of the individual aid measures.

The **advantage of making use of such a scheme** is that it has **already been assessed in terms of State aid requirements**. Thus, you avoid duplication of efforts and resources, i.e. in particular there is no need for you to notify your concrete measure, if it fits and is in conformity with the requirements of the framework scheme.

It is therefore very advisable that you check with the national authority in charge at the earliest date in your decision making whether such a scheme exists that might be suitable for your purposes.

The European Commission has already approved a variety of framework schemes, see the link to the list of decisions in Annex A-1. It might be interesting for you to take a look

at the different thematic thrusts and conditions of the schemes from various Member States.[31]

5.2.2 The “de minimis” rule

Chapters 3 and 4 of this Guide have made clear why and under which conditions your broadband support is to be considered as State aid.

The “de minimis” rule [32] might lead to a great simplification for you: The granting of “small” amounts of support for your broadband project is exempted from the notification obligation even when your project does not meet the criteria laid out in Art. 107(1) TFEU (see Section 3.1). **You can use the “de minimis” rule if the total amount of grants for the same eligible costs over any period of three fiscal years does not exceed EUR 200,000 per beneficiary** whereby the amount

- does **not need to be a cash grant**, rather it
- can in principle also be **in kind** (e.g. in the form of ducts), it
- can be a **reimbursable grant** or it

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31 Examples of such framework schemes include:
- Broadband in rural areas of Baden-Wuerttemberg (“Eckpunkte für die Verwendung öffentlicher Mittel zur flächendeckenden Versorgung des Ländlichen Raums mit Breitbandanschlüssen in Baden-Wuerttemberg”): This State aid measure focuses on rural areas and was approved by the European Commission on 23 October 2007. See European Commission decision on case N 570/2007 – Germany – Broadband in rural areas of Baden-Wuerttemberg, Brussels, 23/10/2007; case number 30 in the list of decisions mentioned in Annex A-1. At this time the current Broadband Guidelines were not yet in force but the approval was already geared to the basic principles of the future Guidelines.
- National broadband plan for rural areas in Italy: This measure is based on financial means provided by the European Agricultural Fund for Rural Development (EAFRD). These funds were allocated to Member States in particular to support the deployment of broadband infrastructures in rural areas. Against this backdrop the Italian Government has modified its then National Plan of Rural Development for the years 2007-2013 by introducing measures aiming at funding the deployment of broadband in rural and low-density areas. See European Commission decision on case N 646/2009 - National broadband plan for rural areas in Italy, 30/04/2010; case number 60 in the list of decisions mentioned in Annex A-1.
- Federal framework programme on duct support for the creation of universal broadband coverage (Rahmenregelung der Bundesregierung zur Bereitstellung von Leerrohren durch die öffentliche Hand zur Herstellung einer flächendeckenden Breitbandversorgung): This measure was approved by the European Commission in July 2010. See European Commission decision C (2010)4862 on case N53/2010, 12/07/2011; case number 65 in the list of decisions mentioned in Annex A-1.
- Broadband Delivery UK (BDUK): The UK authorities have set up an umbrella scheme for implementing local broadband support projects in the so-called "final third" (typically low-density, rural) areas, where commercial operators are unlikely to invest in high quality broadband networks. See European Commission decision on case SA.33671 (2012/N) - National Broadband scheme for the UK - Broadband Delivery UK, 20/11/2012; case number 112 in the list of decisions mentioned in Annex A-1.

32 The new “de minimis” Regulation of the European Commission was adopted on 18 December 2013, see European Commission (2013f); press release available at: http://europa.eu/rapid/press-release_IP-13-1293_en.htm. An older version of “de minimis” rules expired on 31 December 2013, see European Commission (2006b): Regulation No 1998/2006 of 15 December 2006 on the application of Articles 87 and 88 of the Treaty to de minimis aid; OJ L 379/5; 28.12.2006; available at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:379:0005:0010:en:PDF; in force since 1 January 2007.

- can even be a **participation in a company**.

Also loans are possible under the “de minimis” rules, here the maximum can be up to EUR 1,000,000, depending on collateral and duration of the loan.

Overall, it is fair to state that **broadband aid falling under “de minimis” is first and foremost relevant for “small”** (e.g. regional and local) **entities**. In order to be on the safe side, you should discuss with the national or regional State aid authorities in your country whether your concrete project is in accordance with the “de minimis” regime.

Typically, “de minimis” would apply to amounts used by smaller, often local, companies, such as a local construction company for building the ducts, or vouchers for SMEs to cover the cost of a broadband connection or support for the subscription costs. “De minimis” is less likely to be a choice if the recipient of the money is a large company specialized in broadband, such as the national incumbent telecom operator: “De minimis” can only be used once per beneficiary during a three year period, and chances are low that the incumbent "uses" its “de minimis” amount for your specific project.

That said, it is **important to understand, that you are not allowed to cumulate aid**. You will find the concrete rules as to the cumulation issue in the aforementioned revised Commission Regulation regarding “de minimis” and you should consult your State aid contact point to understand the detailed conditions.

5.2.3 Block exempted aid

The European Commission has issued in 2008 the so-called “General Block Exemption Regulation”[33] (GBER) empowering the Commission to declare specific aid categories to be compatible with the common market and not subject to the notification requirement regarding State aid as outlined in Section 3.1. Up until today, however, broadband deployment activities have not been explicitly mentioned in this context. This is now going to change inasmuch as the recently adopted Enabling Regulation[34] specifies that *“aid in favour of: basic broadband infrastructure, small individual infrastructure measures covering next generation access networks, broadband-related civil engineering works and passive broadband infrastructure, in areas where there is either no such infrastructure or where no such infrastructure is likely to be developed in the near future”* might be included in the list of exemptions. A respective draft of a revision

33 See European Commission (2008): COMMISSION REGULATION (EC) No 800/2008 of 6 August 2008 declaring certain categories of aid compatible with the common market in application of Articles 87 and 88 of the Treaty (General block exemption Regulation); OJ L 214/3; 9.8.2008; available at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:214:0003:0047:en:PDF.

34 See European Commission (2013c): COUNCIL REGULATION (EU) No 733/2013 of 22 July 2013 amending Regulation (EC) No 994/98 on the application of Articles 92 and 93 of the Treaty establishing the European Community to certain categories of horizontal State aid; OJ L 204/11; 31.7.2013; available at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:204:0011:0014:EN:PDF.

of the Block Exemption Regulation is currently in the consultation process.[35] It is foreseeable that the new regulation will be adopted before the summer of 2014.

Depending on the concrete outcome of the current consultations[36] **the revised "Block Exemption Regulation" might make your life much easier as to the assessment of State aid provided your project focuses on a white area**.

Independently of aid under the broadband chapter, **there are other block exempted forms of aid** which you could use to support broadband. For example, the GBER also includes **aid to SMEs and (innovative) startups**, hence SME support aimed at improving the broadband connection of that SME could be granted under the heading of aid to SMEs. Also, a block exempted **risk capital investment in an SME** active in broadband deployment is in principle possible.

Hence, verify the new rules if your project will start in the second half of 2014 or later.

5.2.4 Regional aid

As an alternative to a notification under the Broadband Guidelines, you can also receive State aid approval for broadband projects under the Regional (State) aid Guidelines. While the **Regional aid Guidelines reflect the spirit of the Broadband Guidelines**, they may **often be easier to implement**. So you should carefully consider if you may wish to choose the Regional aid Guidelines as the legal base for State aid to broadband. You are free to choose this legal base. Therefore please keep in mind that your broadband project might qualify for funding from European funds such as the European Agricultural Fund for Rural Development (EAFRD) and the European Regional Development Fund (ERDF). This is a very important source of funding, many large projects in the past have been funded by such regional funds.

Regional aid is qualified as State aid to **promote the economic development of "certain disadvantaged areas" within the European Union**. It is an instrument that has since long been institutionalized in the European Union. Until the end of June 2014, regional aid is governed by the Guidelines for the period 2007-2013[37]; the Guidelines for the successive period 2014–2020 have been adopted on 19 June 2013 and they will enter into force on 1 July 2014.[38]

In order to highlight the essential elements and conditions of regional aid we focus subsequently on the new Guidelines for 2014–2020. The latter demarcate their scope to apply to aid measures that are either co-financed by the EAFRD or are being granted

35 See the publication (dated December 18, 2013) of the public consultation; available at: http://ec.europa.eu/competition/consultations/2013_consolidated_gber/index_en.
36 Information on the consultation regarding the draft GBER on State aid measures are available at: http://ec.europa.eu/competition/consultations/2013_gber/.
37 See European Commission (2006a).
38 See European Commission (2013b).

as an additional national financing to such co-financed measures. The usual case is, that Member States develop specific regional aid schemes and these schemes have then to be notified by the Member States.[39]

The Regional aid Guidelines address in particular **regional investment aid to broadband networks** and specify the following **conditions**[40] which need to be fulfilled in order to be compatible with the internal market principle of the European Union:

- The **aid is granted only to areas where there is no network of the same category** (either basic broadband or NGA) and where none is likely to be developed in the near future;
- the subsidised network operator offers **active and passive wholesale access under fair and non-discriminatory conditions** with the possibility of effective and full unbundling;
- aid is allocated on the basis of a **competitive selection process** in accordance with the respective requirements of the Broadband Guidelines, see Annex A-4.

So, you might ask whether the area in question as to your broadband project qualifies for being such a "disadvantaged area". In order to get an answer to this issue you should know that the Regional aid Guidelines distinguish two different sorts of regions: "a" areas, and "c" areas.[41]

You can put your mind at rest: the efforts to identify these regions have to be made by the respective authority within a Member State: 'a' or 'c' areas must be identified in a "regional aid map" which must be notified to the European Commission and approved by the European Commission before regional aid can be awarded to undertakings located in the designated areas. The maps must also specify the maximum aid intensities applicable in these areas.

An area can be defined as an "a" area e.g. in case the standard of living is abnormally low or there is serious underemployment. To be more precise, an "a" area is a "NUTS 2"[42] region that has a gross domestic product (GDP) per capita below or equal to 75 % of the Union's average. The eligible 'a' areas are set out per Member State in Annex I of the Guidelines on regional State aid.

There are **two categories of 'c' areas**:

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39 The exception for notification is that a measure fulfills the conditions laid down in a block exemption regulation, see Section 5.2.3. Apart from regional aid schemes the Guidelines are also applied in the case of individual aid. The Guidelines specify conditions under which individual aid – granted under a notified scheme - also has to be notified; see § 23 of European Commission (2013b).

40 Your project has to meet also the general conditions laid down in the Guidelines for 2014-2020.

41 The "a" and "c" are referring to the respective provisions of Art. 107(3)(a) and (c), respectively, of the Treaty.

42 NUTS stand for: "Nomenclature des Unités Territoriales Statistiques" and denotes a hierarchical system for dividing up the economic territory of the European Union; see http://epp.eurostat.ec.europa.eu/portal/page/portal/nuts_nomenclature/introduction.

- areas that fulfil certain pre-established conditions and that a Member State may therefore designate as ‘c’ areas without any further justification (‘predefined “c” areas’);
- areas that a Member State may, at its own discretion, designate as ‘c’ areas provided that the Member State demonstrates that such areas fulfil certain socioeconomic criteria (‘non-predefined “c” areas’).

Areas considered to be predefined ‘c’ areas are either former ‘a’ areas, i.e. NUTS 2 regions that were designated as ‘a’ areas during the period 2011-2013, or sparsely populated areas. The latter are defined to be NUTS 2 regions with less than 8 inhabitants per km^2 or NUTS 3 regions with less than 12.5 inhabitants per km^2. The specific allocation of predefined ‘c’ coverage is set out per Member State in Annex I of the Guidelines on regional State aid. In order to specify ‘non-predefined “c” areas’, the Guidelines contain a list of different criteria to be applied by Member States. These criteria are e.g. including GDP per capita, the unemployment rate, and the number of inhabitants in a specific NUTS 2 od NUTS 3 area.

Overall, in order to get a suitable decision basis if and which regional aid schemes are available in your country you simply should contact the respective managing authority of the regional funds in your country.

5.2.5 Service of General Economic Interest (SGEI)

As described above, SGEI could be both "no aid" and “compatible aid”. Please read Section 5.1.3 for further information.

5.3 Specific types of support

5.3.1 Coordination of duct works and granting access to public ducts

The European Commission has since long emphasized the necessity to reduce the costs of broadband deployment and it has identified a number of measures to reach this goal.[43] You can take for granted, that focusing activities on decreasing civil engineering costs of broadband deployment is particularly important as civil engineering costs by far account for the biggest share of broadband deployment costs: Reliable empirical evidence yields estimates for this share of about 80 % of the total costs of a broadband project.

43 See European Commission (2013e): Proposal for a Regulation of the European Parliament and of the Council on measures to reduce the cost of deploying high-speed electronic communications networks; COM(2013) 147 final, 2013/0080 (COD); Brussels, 26.3.2013; available at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2013:0147:FIN:EN:PDF.

Against this backdrop, you might have come to the decision to focus your broadband project on civil engineering works in order to enable and accelerate the deployment of broadband infrastructure by network operators.

Whenever such **civil engineering works are carried out in your area** (e.g. for purposes of gas, water, or electricity provision) **you should take the opportunity to coordinate such activities and to deploy ducts**. This should be made transparent to all outside parties. In case there is a national registry for such infrastructures you should provide respective information to this registry.

You should **take** particularly **account of the technical specificities of the ducts** you envisage to deploy. It seems obvious, that a reasonable requirement is that they are capable of allowing multi-fibre solutions, i.e. they have to be “big enough” in size and capacity.

If a public entity is digging anyhow (e.g. a municipality carries out maintenance works on a road) and broadband and utility providers such as water or gas companies take the opportunity to place their ducts (at their own costs) it normally does not fall under the scope of State aid. But State aid rules apply if the work are done specifically to build broadband ducts. If, however, you grant access to existing ducts the situation changes and State aid requirements prevail. Likewise, if private third parties deploy own infrastructure and you put in ducts that does not constitute State aid. If you want, however, to market these ducts State aid comes into play.

In summary, **providing transparency for public works in your region is most likely to be the cheapest way to get better broadband**.

5.3.2 Demand side measures: Vouchers and demand aggregation

It is intuitively clear, that the profitability of a broadband project does not depend only on the cost conditions that are relevant for a specific roll-out, rather, it is also and in particular depending on demand side conditions. Demand for higher speeds and capacity is a decisive factor for the business case for investments in faster networks. A project that is attractive for the citizens and businesses in your region at a very early stage after the completion of the network leading to a continuously “high” willingness to pay therefore yields a much better economic performance compared to a project where demand is cautious and there is a “low” willingness to pay.

Against this backdrop, it is obvious that improving demand side conditions in whatever form is a positive contribution to get your project economically off the ground. It is, however, also clear that demand-side measures in favour of broadband cannot always completely solve the lack of (sufficient) broadband provision.

One potential form of demand side support is the use of **vouchers**, either **to cover** (part of) the **end users' costs of installation or purchase of broadband devices, or of the monthly subscription**. In case you want to use this instrument you first should check whether you fall under the "de minimis" rule, see Section 5.2.2. Alternatively, vouchers for SMEs might be block exempted as SME aid or aid to innovative enterprises, see Section 5.2.3. If this holds true of your broadband project you are likely to be fine because there are no further State aid requirements you need to meet. Obviously, you have to check carefully if e.g. your voucher scheme falls under one of these rules. If your support is greater than the "de minimis" threshold of 200,000 Euro per beneficiary or not block exempted you might, however, fall under the scope of State aid, if indirect aid comes into place. Indirect aid may be the case if the many small amounts you hand over to e.g. households or SMEs in your area end up mainly with one supplier. **In order to avoid indirect aid** it is particularly **important that the vouchers are technologically neutral**. Vouchers should therefore be defined e.g. according to speed categories, but they should not be limited to wired solutions or satellite solutions. In order to be on the safe side you should approach a suitable institution in your country and ask them to check your envisaged measure for legal certainty.

Another potential form of support on the demand side is if you are **aggregating demand**. For instance, in the Superfast North Yorkshire project, savings under demand aggregation program of 20 million GBP for public sector connectivity (schools, libraries and health centres) were secured. You might also be able to support the information and coordination requirements brought about in a "local community model" of broadband deployment (see Section 2.2), i.e. an approach in which a group of end users in your area is organising themselves into a co-operative and get involved in building up and operating their own local network. Moreover, often operators are only starting their deployment work if a minimum demand is achieved. Under such circumstances demand aggregation is crucial in order to secure service delivery as soon as possible.

All of the aforementioned forms of activities regarding the aggregation of demand do normally not constitute State aid.

6 How should I proceed to get my broadband deployment going?

Chapter 6 aims at providing you with some approaches that might accelerate broadband deployment in your area (Section 6.1). Moreover, you will get a comprehensive overview of the different phases and tasks to be carried out that might allow for an efficient set up of your broadband project (Section 6.2).

A simple yet effective rule is: "**No need to reinvent the wheel.**" If a similar broadband has already been implemented successfully and was in line with State aid rules, chances are high that you can do the same without any problem. Therefore please contact your national broadband information sources and ask for advice. In parallel you may glance at the 120+ decisions already adopted in the broadband field (Annex A-1). Chances are high that a solution for your specific situation was already assessed earlier.

6.1 What are possible solutions how broadband deployment could be accelerated?

A priori, there are many activities that might fuel the deployment of broadband infrastructure in your area. Subsequently, we outline particularly important approaches.

Inform yourself about the potentials and challenges of broadband deployment.

- **Use the information sources** already **available** in your country on a national and regional level.
- **Identify "flagship projects"** which might be relevant for you **and visit such projects**.

Check existence and potential relevance of broadband related framework programs.

- If there is a national or regional broadband deployment framework program which has already been approved by the European Commission, you should check if and under what conditions this framework program is meeting your specific needs.
- Such a **framework program will free you from having to notify your project** (see Section 6.2.2). Moreover, it might enable you to secure a(nother) source of financing for your project.

Check the huge potentials of co-ordinating public works in your area with broadband related activities. This is probably the most effective and most neglected aspect in broadband deployment.

- **Co-ordinate deployment of ducts**.

- However, be aware that **deployment of ducts** as such **bears risks of sunk costs**, i.e. if a network operator cannot or will not use them.
- When you are commissioning the deployment of ducts you should therefore **secure that they are future proof**
    - the "topological design" of the duct network to be deployed in your area meets the network engineering optimization requirements of the potential network operator(s) that might use the passive duct infrastructure upon completion;
    - the technological parameters of the ducts meet the requirements of multi-use in a competitive environment (in particular, the ducts deployed should have "enough space").

Check what "your neighbour" does and "join forces" if it is advantageous.

- There is a tendency of improved cost conditions the bigger the broadband deployment projects are.
- Target areas that are too small might not provide sufficient economic incentives for market players to bid for your project.
- **In order to generate economies of scale it makes sense that you and other local area decision makers find a way to co-operate** with regard to broadband deployment the more the respective geographical areas are adjacent to one another:
    - It therefore makes sense to reflect specific regional aspects and requirements in your broadband project;
    - Presumably, joining forces will entail also advantages regarding funding.

Understand the importance of demand side aspects.

- There is no viable business model possible if broadband is there but users don't come, i.e. take-up is low.
- **Be aware of the needs and preferences of the citizens and businesses** in your area.
- **Beat the drums, be a cheerleader** (top down):
    - Provide information and secure transparency: What's going on? Why? What are relevant time frames? Introduce leading people involved in the project.
- **Bundle demand of citizens and businesses** in your area (bottom up):
    - Invite decision makers of network operators already active in your area;
    - Organize a round table with main stakeholders.

- **Explain opportunities of broadband in general and of your project in particular** (house prices, more jobs, more and more prosperous SMEs). The data volume transmitted via broadband is growing tremendously, even if there is no bottleneck today, the future needs more and faster broadband connectivity.
- **Moderate and integrate views/perspectives/preferences** as best as possible.
- **Take potential resistance and concerns** regarding broadband deployment in your area **seriously** and search for good arguments and solutions.

6.2 How should I efficiently execute my broadband project?

Setting up a broadband project in your area will require some preparation. As a rule of thumb, the larger the project is, the more you have to look into State aid questions. On the other hand, smaller projects, be they under a national framework scheme, under "de minimis" rules or block exempted, can normally go ahead without an in depth State aid assessment.

Without decent broadband access, your area will lose locational advantages, i.e. you risk to fall behind other regions, to incentivize companies to move away, and to be not attractive enough for new companies to come to your region. Likewise, without suitable broadband infrastructure the attractiveness of your region for (in particular young) individuals and families is fading and no teleworkers will wish to live there. In addition, broadband availability will likely increase real estate prices and reduce traffic congestion. Broadband is a key element for prosperity in the 21st century.

We highlight subsequently specific phases and a list of respective tasks that are in general relevant during a broadband project. Of course, each case has its own particular characteristics and challenges, depending on topographic and socio-economic conditions as well as on the concrete business model that you are envisaging. Going through the list you will be able to ascertain which tasks are particularly important for your concrete broadband project.

Overall, you can distinguish **five "phases" of a broadband project** (Phases 2 and 3 can take place in parallel):

- Phase 1: Information and planning phase,
- Phase 2: Assessment of State aid compatibility,
- Phase 3: Tendering phase,
- Phase 4: Construction phase,
- Phase 5: Operational phase.

6.2.1 Phase 1: What do I need to do in the information and planning phase?

The information and planning phase is devoted mainly to **probing the relevant conditions** and to **initiate the basic planning of your project**.

Whenever you want to start a broadband project you should in particular **inform yourself about the relevant information sources in your country** (e.g. the National Regulatory Agency; the relevant Ministry; respective broadband competence centers; managing authorities for regional funds) and their websites, see Annex A-2. If need be, they (and not you) will contact the European Commission. **Ask the national information sources whenever you need support; they will help you**. Equally helpful are the list of past broadband State aid decisions (see Annex A-1), and the broadband investment Guide with a wider focus than the present State aid Guide.[44]

As you can see from the following Table 2, Phase 1 includes altogether 7 tasks.

44 See European Commission (2011): Guide to broadband investment, op. cit.; an update is expected for early 2014.

Table 2: Relevant tasks and respective activities to be carried out in the information and planning phase of your broadband project

Task 1: Gathering of reliable and sound information as to basic and NGA networks in your area	• Identification of the existing broadband providers in your area and their different service portfolio. • Analysis of their respective infrastructure coverage; this relates both to telecommunications operators and public utilities. • Identification of the un-served and underserved regions in your area. • Provision of respective evidence and documents based on appropriate maps. • Recommendation: Throughout your project use an appropriate geo-information system.
Task 2: Carrying out a public consultation; the objective is to get suitable information in order to be able to conduct the next steps:	• Identification of the network deployment plans of existing or would-be broadband market players within the next three years. • Identification of planned public works within your area (public utilities and other infrastructure providers). • Identification of potential other actors in your area who could support the broadband deployment project.
Task 3: Substantiation of the specific broadband needs in your area	• Set up of a suitable information gathering approach (e.g. questionnaire, survey, technical platform in case of online survey). • Enquiry of the potential user needs in your area regarding broadband communications; differentiation between private users, business users and public use requirements (e.g. regarding e-government, e-health, e-learning, “smart city” requirements). • Provision of respective maps. • As to private users at least information about their download needs should be provided. • As to business users information about download and upload speeds should be provided. • Check of the credibility and plausibility of the evidence provided. • Evaluation of the results of the examination.

Task 4:
Execution of a stakeholder analysis, attracting the market:
	• Identification of the relevant entities that might be directly or indirectly affected by your project.
	• Assessment of the potential positioning of each stakeholder vis-à-vis your project: What might be a threat for the stakeholder? What might be his/her potential to support your project?
	• Enquiry with potential network operators as to their view on project targets and plans, assessment of their acceptance vis-à-vis the project:
	  ○ Spend time with senior management of telecom operators;
	  ○ Understand differing competitive positions (in particular in order to make the selection procedure (Phase 3) as open as possible);
	  ○ Get them to be excited by the opportunity;
	  ○ Establish credibility in the competence of the project.

Task 5:
Identification of the specific elements of your project and
	• Execution of a feasibility study and narrowing down of the essential elements of the project:
	  ○ Analysis of the issue at stake and the potential options, taking account of costs, risks and benefits;
	  ○ Identification of the specific project targets for your area in terms e.g. of bandwidth, coverage, regional cooperation, time frame;

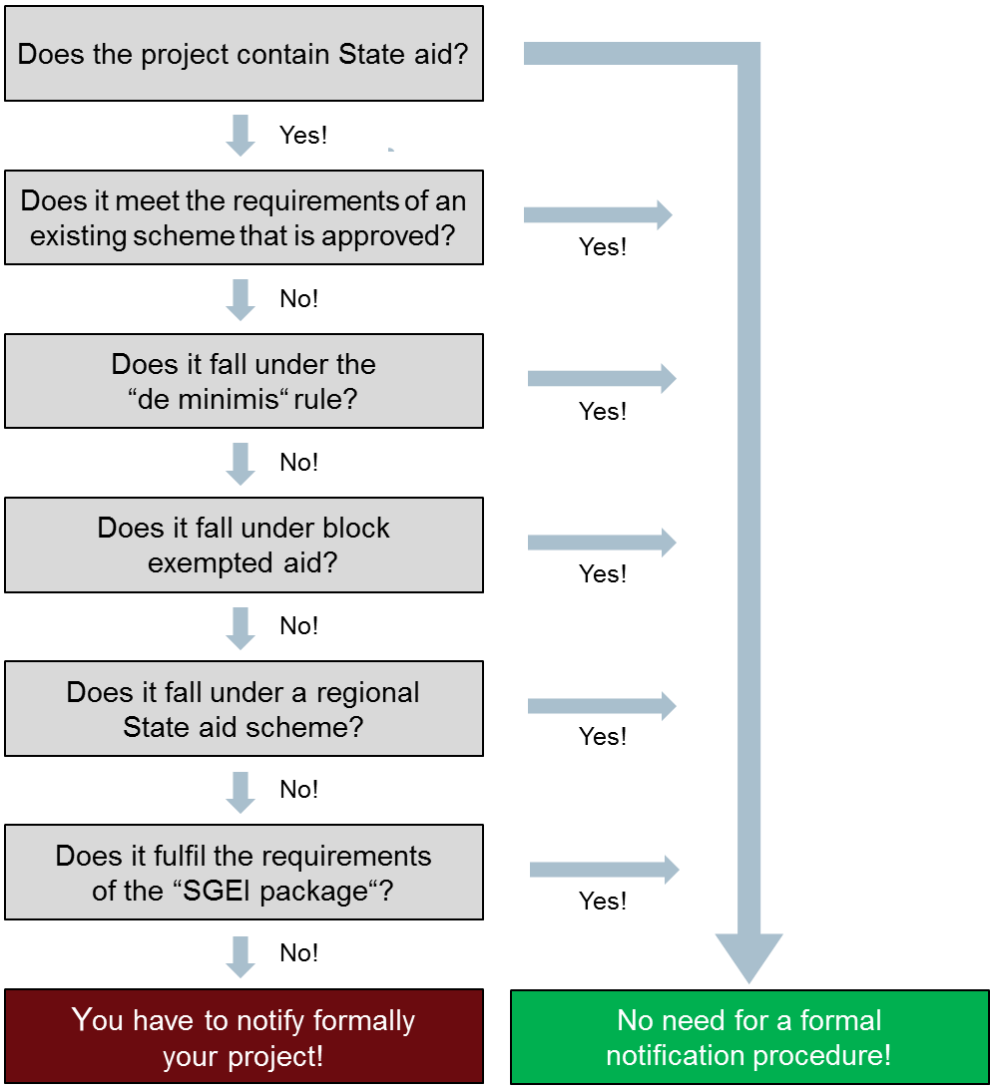
establishment of a suitable organizational environment for your project	○ Identification of potential implementation scenarios: ▪ Technical details and milestones of implementation planning; ▪ Organisational issues; ▪ Economic issues: estimation of - costs for the project including the administrative costs from inception to close of the selection process, - customer potentials, - revenues, etc.. • Establishment of a suitable organisational form for the project: ○ Analysis of alternatives for a potential legal status; ○ Organization of an exchange of information with public entities adjacent to your area; ○ Establishment of a steering board for the project; ○ Establishment of a round-table including all relevant stakeholders. • Identification of the specific role you would like play in the project; identification of the available frame of resources that are available for the project. • Establishment of a suitable risk management. • Communication of planning status and progress with stakeholders.
Task 6: Scrutiny of the legal environment and the potential financing sources	• Ascertainment of information about the specific legal conditions in your country that might be relevant for the project. • Clarification of issues regarding financing: ○ Identification of potential sources of financing; ○ Organisation of first talks to potential financiers and their respective granting conditions; ○ Objective: Securing of money for the entire project (costs); ○ Check of eligibility for financial support via the European Agricultural Fund for Rural Development (EAFRD), the European Regional Development Fund (ERDF), European Investment Bank (EIB), etc.
Task 7: Substantiation of the insufficient supply of broadband services in your area (against the backdrop that basically there is a preference for a market solution requiring no public support/funding)	• Need for a substantiation that there is an undersupply of broadband access services in your area that is most likely to persist in the short and medium term. • Categorization of your area according to the white, grey, and black colours and the specific requirements relevant for a basic broadband or for an NGA network. • Justification of the categorisation of your area by providing a detailed mapping information (GIS)[45] including coverage and market analysis.

45 GIS stands for „Geographic Information System“. A GIS allows you e.g. to store, analyze, manage, and manipulate spatial information on the basis of geodata and make respective cartographic presentations. As to the application of GIS and the available geo data you should ask the respective information sources in your country (e.g. broadband competence/coordination/… centres).

6.2.2 Phase 2: Do I need to notify my broadband project regarding State aid compatibility? What are the essential steps of a notification procedure? What are the key items to be addressed in a notification?

Figure 1 addresses the key steps you should carry out in order to ascertain whether there is a need to notify your project.

Figure 1: Do I need to notify my broadband project?



Let's now assume that you have to formally notify your broadband project. How should you proceed? Supported by the institution that is responsible in your country for

proceeding a State aid case (subsequently called “the coordinating institution”), you have to provide the required documents that are necessary for a State aid assessment.

As to the assessment of your project you can distinguish two phases:

- Pre-notification,
- Notification.

You should **pre-notify your project to the European Commission** through the respective coordinating institution **well in advance of its notification**. The pre-notification **allows to address problematic points in a rather informal way** with the European Commission.

For both the pre-notification and notification of your project **you should take account of the following general recommendations** (fulfilling them will make your life a lot easier):

- Read the Broadband Guidelines thoroughly, demonstrate the fulfillment of all relevant conditions and provide an assessment under the Broadband Guidelines.
- Address the said conditions in a concise and complete manner. This facilitates a smooth and timely clearance by the European Commission. Be as precise as possible in your statements and provide for concrete examples.
- Ask the relevant national regulatory authority, State aid coordinating body and competence centre for advice and verification of your file.
- Foresee enough time for the State aid clearance process.
- Amendments of your existing aid project can require a new decision by the European Commission. Provide therefore their assessment under the Broadband Guidelines.

Subsequently, you can find a **check list encompassing the items to be addressed in a notification**. As you will see the guideline for you should be: Follow the requirements of the Broadband State aid Guidelines:

- Substantiate - based on sound and transparent empirical data sources - the key problems as to the development of broadband in your area and the envisaged step change brought about by your measure:
    - lack of infrastructure from commercial operators to deliver the broadband services required by citizens, businesses and public authorities;
    - lack of adequate competition reflected in high prices, inadequate services, lack of innovation activities, etc.;

  - existing networks are not sufficient to satisfy the continuously growing needs of public administrations, citizens and business users in the area in question.
- Provide suitable information on your project (objective, legal basis, design, budget and funding instruments, aid amount and intensity, duration of the measure, …).
- Provide mapping of existing infrastructure and coverage analysis: Provide market analysis on the basis of suitable information (publicly available or not) regarding the availability in the areas targeted by the measure of e.g. existing access networks, ULL based broadband operators, and backhaul and dark fibre infrastructure.
- Provide comprehensive information on the approach for your public consultation and of the respective results:
  - name stakeholders (operators, service providers, …) who have submitted an answer;
  - provide information about their existing and planned NGA and fibre investments as well as on their view on the project;
  - verify/change the results of the mapping.
- Provide information on your envisaged tender process
  - Substantiate that it is “open”;
  - Highlight your award criteria.
- Substantiate that the envisaged roll-out of your broadband infrastructure is subject to an obligation to reuse, wherever possible, existing infrastructures to avoid unnecessary duplication of infrastructures and to reduce the public funding necessary.
- Provide appropriate information on the “technological neutrality” of your project.
- Provide suitable information on the envisaged wholesale access regime of your project.
- Provide suitable information on your envisaged wholesale pricing regime (e.g. a price benchmarking mechanism).
- Provide suitable information as to your approach regarding monitoring and the claw-back mechanism.

6.2.3 Phase 3: What are the relevant tasks in the tendering phase?

In the tendering phase you make a **detailed planning of your project, set up a suitable tendering process and end up with the selection of a suitable entity**. You should choose the selection process model that is most appropriate (open or restricted

procedure, competitive dialogue). Overall, **foresee up to a year or so for the whole process**. The following Table 3 provides an overview of the main tasks in Phase 3. However, please keep in mind that for smaller projects under "de minimis", GBER or under an existing scheme not necessarily all of these steps are required.

Table 3: Relevant tasks and respective activities to be carried out in the tendering phase of your broadband project

Task 8: Identification of the essential elements of the project to be tendered	• Examples of elements of tender specifications are:
	  ○ Coverage to be reached;
	  ○ Potential „geographical lots";
	  ○ Particular time horizons that might be relevant for carrying out the envisaged work;
	  ○ the concrete form of your input;
	  ○ any prices that are relevant for the business case of a tenderer.
	• Focus on a technologically neutral tender.
	• Encouragement of the use of existing infrastructure.

Task 9: Establishment of the competitive tender process	• Description in the tender documents of the award criteria (as transparent as possible) which will be used to evaluate the bids: ○ Examples of potential award criteria are the suggested technical solution and its future viability and sustainability, the envisaged coverage, the price, the service levels offered, the marketing plan. • Organization of the tender process as open and transparent as possible and in conformity with the principles of public procurement legislation. • Need to fix a time horizon for the submission of bids that is long enough. • Need to be available for enquiries of bidders.
Task 10: Selection of the most economically advantageous offer	• Use of the criteria stipulated in Task 9. • To the extent necessary ask bidders to provide additional information on their bid. • Acceptance of the most advantageous tender.
Task 11: Concluding the contract	Imposition of specific obligations on the selected network operator: • Open access obligation regarding the provision of wholesale services, see Annex A-4; • Access prices that reflect "competitive" conditions, i.e. that are based on the pricing principles set by the NRA and on suitable benchmarks; • Use of existing infrastructure; • Monitoring obligations; • Clear description of the "claw back" conditions that are imposed.

6.2.4 Phase 4: What are the relevant tasks in the construction phase?

After you have selected a suitable entity and concluded the specific contracts you can start with Phase 4, i.e. the **actual construction works** regarding your envisaged broadband infrastructure. The following Table 4 provides an overview of the main tasks to be performed in Phase 4.

Table 4: Relevant tasks and respective activities to be carried out in the construction phase of your broadband project

Task 12: Re-organization and re-focusing of the steering board	• Need that the steering board includes the essential stakeholders that are relevant for carrying out the project (e.g. public entities, the selected entity, other relevant actors from your area). • Clear definition of steerage, control and decision mechanisms, tasks and responsibilities.

Task 13: Establishment of suitable demand side measures, establishment of an "acceptance management"; the objective is to set up and to secure over time a broad and stable basis of entities that are supporting and promoting your project.	• Need for continuous information of the population and businesses in your area about the concepts and the progress of the construction works.
	• Need for information in a timely manner about access costs, etc. via:
	  ○ public events,
	  ○ Internet.
	• Support of the customer acquisition of the operator.
	• Establishment of a "helpdesk" canalizing enquiries, concerns, complaints.

Task 14: Support of the selected entity to exploit potential synergies	• Examples are:
	  ○ utilization of existing infrastructures;
	  ○ co-placement of broadband related infrastructures during construction works of third parties, etc.

Task 15: Support of the selected entity getting necessary approvals from public institutions	• Examples are:
	  ○ right of ways;
	  ○ access to public utility resources, etc.

Task 16: Provision of a comprehensive documentation of the infrastructure deployed	• Use of suitable geo data. • Transfer of information to national and/or regional mapping data base(s).

6.2.5 Phase 5: What are the relevant tasks in the operating phase?

The final phase **commences with the operation of the network that has been deployed**.

The following Table 5 provides an overview of the main tasks in Phase 5.

Table 5: Relevant tasks and respective activities to be carried out in the operating phase of your broadband project

Task 17: Support of selected entity	Examples: • Further customer acquisition, optimization of technical requirements, • Handling of user complaints, etc.
Task 18: Securing of „open access“ provision	• Monitoring of the negotiations between the selected entity and third parties demanding access to the network infrastructure deployed. • To the extent necessary mediation of potential different views.
Task 19: Assessment of relevance of further network deployment	Examples: • Examination of the rationale for enlarging the footprint if there are areas that haven't been covered in the construction phases up until now. • Evaluation of the rationale for a migration from an FTTC approach towards an FTTB/H concept.
Task 20: Address clawback requirements	• Examination of the applicability of the specific requirements of the clawback mechanism if the aid amount of your project is above EUR 10 million.

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Annexes

A-1 List of broadband State aid decisions

A **regularly updated website of State aid broadband decisions** of the European Commission is available here:
http://ec.europa.eu/competition/sectors/telecommunications/broadband_decisions.pdf.

A-2 Useful Addresses

BEREC, the Body of European Regulators for Electronic Communications provides an overview of **National Regulatory Agencies in European countries including contact details**, see http://berec.europa.eu/eng/links/.

Information on the **European Competition Network ECN** as well as **contact details for your national competition authority** you can find here:
http://ec.europa.eu/competition/ecn/competition_authorities.html.

Often the ministry for economic affairs is your State aid contact point. In order to find the relevant ministry, please choose a State aid decision from your country (see the list in Annex A-1) and see to whom the decision is addressed. In many cases, you will also have national or regional broadband competence centers to help you.

A-3 Broadband access technologies: An overview

There is a great number of access technologies capable of providing broadband communications. These technologies differ very much in particular with regard to pure technological (e.g. wired vs. wireless), performance (e.g. maximum bandwidth available), and economic parameters (e.g. costs of deployment). So, a priori, **you really have choice as to the selection of a suitable technology that fits your concrete requirements**. This Annex presents a short overview of appropriate broadband technologies.[46]

A-3.1 Fixed-line technologies capable of broadband communications

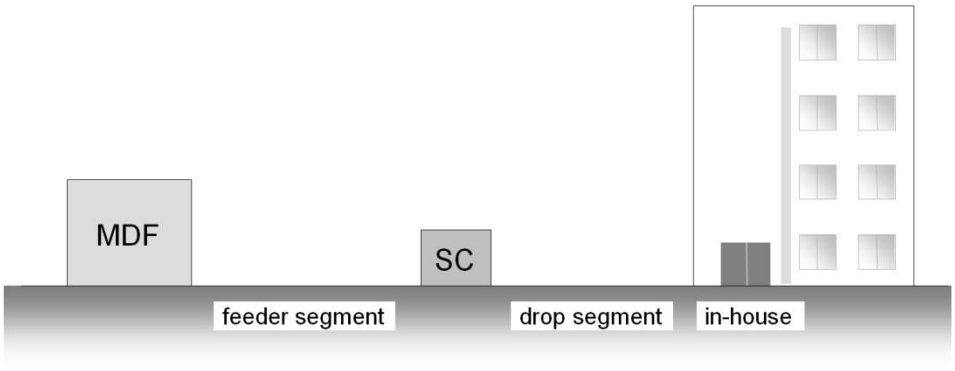
A-3.1.1 Telecommunications networks

The "traditional" telephony network

In order to better understand the different approaches to lay down fiber technology in the local loop of a telecommunications network it is useful to start with the "traditional" century old telephony network. The essential elements of that part of the telephony network nearest to the end user are the **telephone jack in the home of the end user, street cabinets (SC) and the main distribution frame (MDF)**, see Figure 2. These elements are **linked via copper wires**.

46 You will also find useful information as to broadband technologies in European Commission (Regional Policy) (2011): Guide to broadband investment; op. cit. Moreover, a much more detailed technical description of technologies is presented in Chapter 3 of: Neumann, K.-H., Schäfer, R.G., Doose, A.M. and D. Elixmann (2011): Study on the Implementation of the existing Broadband Guidelines; COMP/2011/006; study for the European Commission; December; available at: http://ec.europa.eu/competition/consultations/2011_broadband_guidelines/final_report_en.pdf.

Figure 2: Key elements of a telephone network

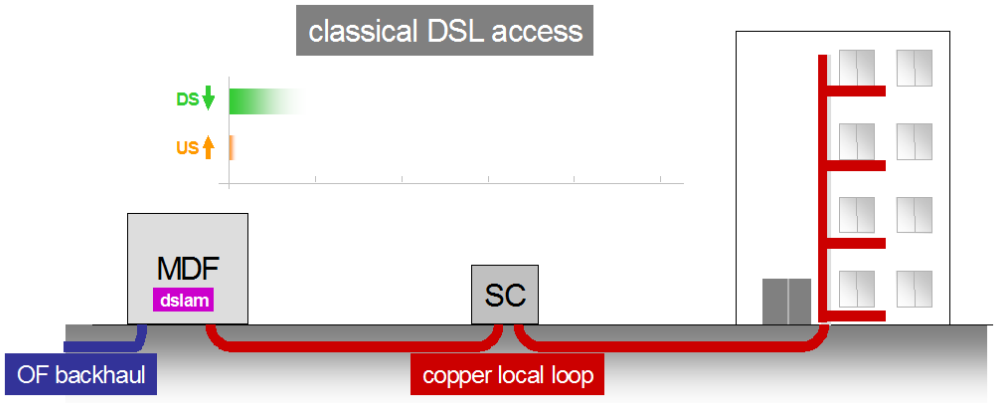


Source: Gauthey, G. (2007): FTTH in France, presentation, WIK Conference "VDSL – The Way to Next Generation Access Networks", Königswinter, March 21-22, 2007; available at: http://www.wik-consult.com/fileadmin/Konferenzbeitraege/2007/VDSL-Conference/gauthey.pdf.

Figure 2 shows that a telephone access network mainly has three important "layers": (1) the in-house cabling, (2) the drop cable and (3) the feeder cable (all based on copper). In a street cabinet different customer access lines are grouped together. The MDF is the location where a call from (to) the end user is "switched" and handed over to (from) the "upper" layers of the network.

The early days of Internet communications used just the traditional telephony network ("dial-in"). The next stage was reached when **"Asymmetric Digital Subscriber Line (ADSL)"** broadband services were supplied. This approach rests on (1) a connection of the MDFs to the upper network layers (i.e. the "backhaul" and the core network) through optical fibres (OF) to overcome capacity constraints and (2) on the installation of specific DSL Access Multiplexers at the MDF; "DSLAMs"); see Figure 3. Such a solution allows to reach a **maximum downstream bandwidth of about 24 Megabits per second (Mbps)**.

Figure 3: ADSL access solution (stylized facts)



Source: Gauthey (2007), op. cit.

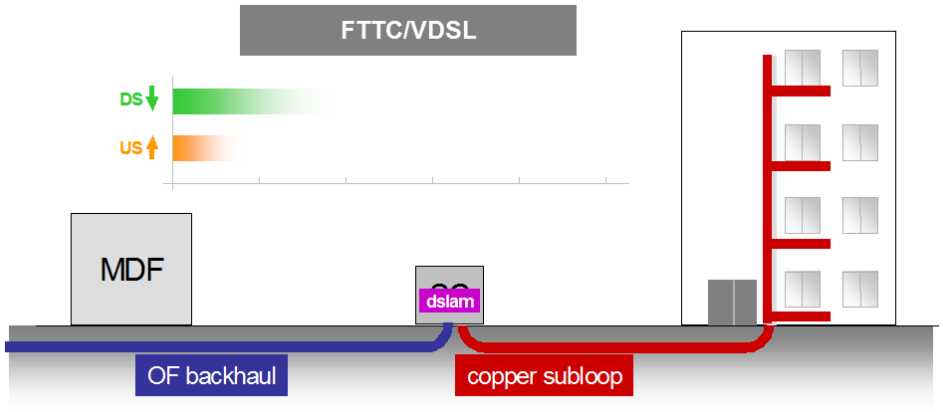
Installing an ADSL solution inherently yields a higher downstream bandwidth than upstream bandwidth – the solution is “asymmetric”. Moreover, such an approach has the disadvantage that the bandwidth available to the end-user is limited by the length and the quality of the copper loop.[47] In order to deliver higher bitrate communication you basically can use three ways to increase the bandwidth to the end-user, which are addressed subsequently.

Fibre to the Cabinet (FTTC)

FTTC means that **fibre is terminated in the street cabinet**, i.e. you have to replace (or overbuild) the copper loop between the MDF and the street cabinet by fibre. FTTC is often seen as a temporary, interim step towards full FTTH. Installing respective DSLAMs at the cabinet location enables you to offer “Very High Speed Digital Subscriber Line (VDSL)” services. This is illustrated in Figure 4.

47 ADSL via FTTN was the first infrastructural step of telephony incumbents throughout Europe to offer broadband access. Due to the unbundling policy specified in the European Regulatory Framework ADSL/FTTN was also the trigger for (infrastructural) competition regarding broadband access services. According to the latest Point Topic figures prepared for the European Commission more than 92 % of the European households can be reached via a DSL solution; see European Commission (2013d).

Figure 4: FTTC/VDSL access solution (stylized facts)



Source: Gauthey (2007), op. cit..

Of course, also in such an FTTC environment the bandwidth available to the end-user is limited by the length and the quality of the remaining copper loop ("sub-loop"). But, usually a sub-loop is much shorter than the entire local loop. Via **FTTC/VDSL technology you are able to provide between 30 Mbps and up to about 50 Mbps downstream to an end-user**. [48] A FTTC/VDSL solution might be enriched by a newly developed **"vectoring" technology** by installing specific equipment at the cabinet which **yields higher bitrates of up to 100 Mbps**. Perspectively, there is a technology underway to be standardized (named "G.fast")[49] which, based on the vectoring principle, even is able to deliver up to 1 Gbps over existing copper wiring. However, in this approach you need a "distribution point" (i.e. where fibre ends and copper begins) that is even nearer towards the end users' location (about 100-250 m).

Vectoring technologies bring about, however, a crucial drawback in the context of State aid: Albeit such solutions fit under the NGA definition, due to inherent technical features they **do currently not allow for physical unbundling but only for virtual unbundling**[50]. The compatibility requirement of full unbundling is, however, a necessary requirement (see Annex A-4) for getting State aid approval. A priori, you therefore should anticipate a complex and detailed assessment should you plan to support VDSL/vectoring deployment with your aid measure.[51]

48 FTTC/VDSL technology is being implemented in many European Member States by incumbents and competitors alike.

49 The International Telecommunications Union (ITU) is likely to release a draft of the G.fast standard by the end of 2013.

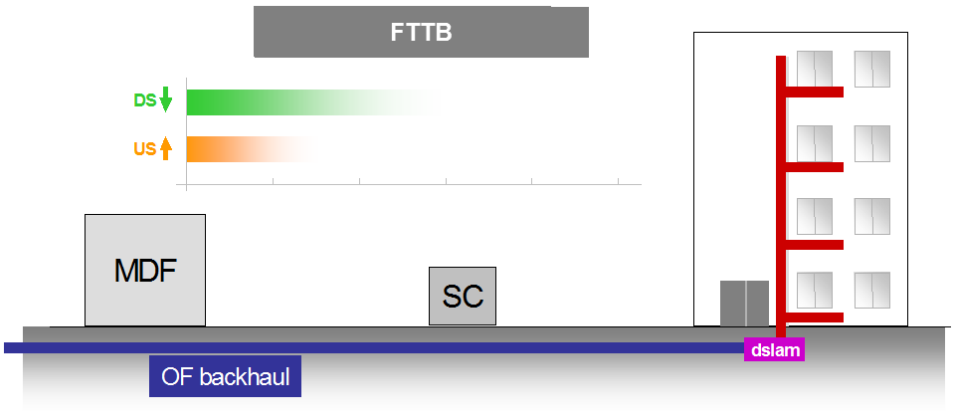
50 According to the Broadband State Aid Guidelines virtual unbundling may in certain circumstances be considered "equivalent to physical unbundling".

51 In the NGA scheme notified by the German State of Bavaria which has been adopted by the European Commission (on November 20, 2012) vectoring is excluded. Background information on the

Fibre to the Building (FTTB)

In an FTTB architecture the **complete copper loop from the MDF location down to the basement of the end-customer building is replaced by fibre**. For the in-house cabling, however, you can still use the already existing copper or cable TV (coax) infrastructure, see Figure 5.

Figure 5: FTTB access solution (stylized facts)



Source: Gauthey (2007), op. cit.

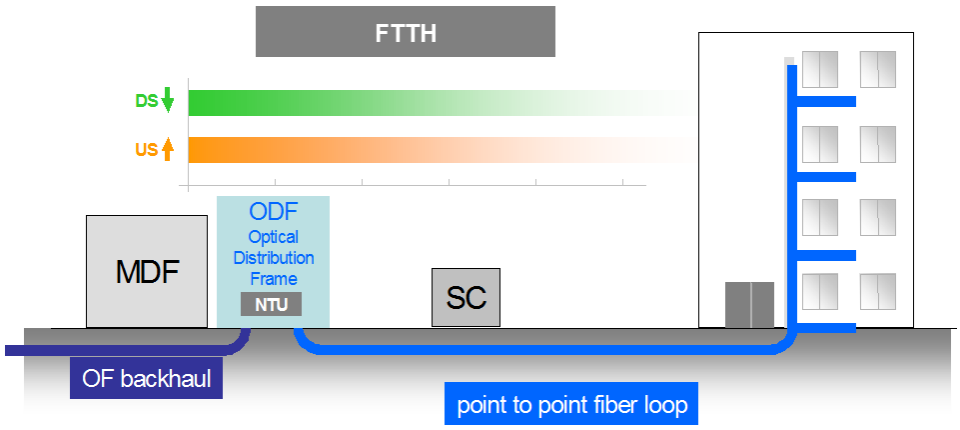
FTTB increases the available bandwidth significantly in comparison to VDSL both with respect to downstream and upstream communications. However, the actual performance at the end user's home still is depending on the capacity and quality of the in-house cabling. **Typically one can reach today bandwidths of 100 Mbps downstream and 50 Mbps upstream** (in-house VDSL equipment and the copper telephony infrastructure assumed). One should also bear in mind, that FTTB means that the maximum capacity of each user in a Multi-Dwelling-Unit is limited by the bandwidth provided *to* the building, which then is shared by the number of other subscribers in the same building.

Fibre to the Home (FTTH)

FTTH is a fully optical network architecture, where **fibre cables are installed all the way from the MDF to the home of the residential user or the premises of a business user**. The entire copper loop (including the in-house wiring) is, thus, replaced by an optical fibre infrastructure, see Figure 6.

Bavarian NGA approach in the context of its "Digital Bavaria" program can be found in Bayerisches Staatsministerium für Wirtschaft, Infrastruktur, Verkehr und Technologie (2013).

Figure 6: FTTH access solution (stylized facts)



Source: Gauthey (2007), op. cit.

An FTTH network - depending on its technology and the active electronics used - offers **potential speeds up to several Gigabits per second (Gbps) for each end-user on its individual demand**.

Backhaul network, Next Generation Network (NGN)

If you invest in one of the aforementioned types of access networks it is obvious that such an access network requires to be linked to “higher network layers” in order to enable communication with the global “network of networks” making up “the Internet”. These higher network layers are called “backhaul network“ and “backbone network” (also termed “core network”). The backhaul network constitutes the intermediate link between the access network and the backbone network and it carries data to and from the global networks. **“Backhaul networks“ and “backbone networks” do not reach the end user and their characteristic is that they are open for interconnection with other networks.** “Backhaul network“ and “backbone network” together are called “Next Generation Networks (NGN)”. NGNs are able to sustain both basic and NGA types of networks.

A-3.1.2 Cable networks

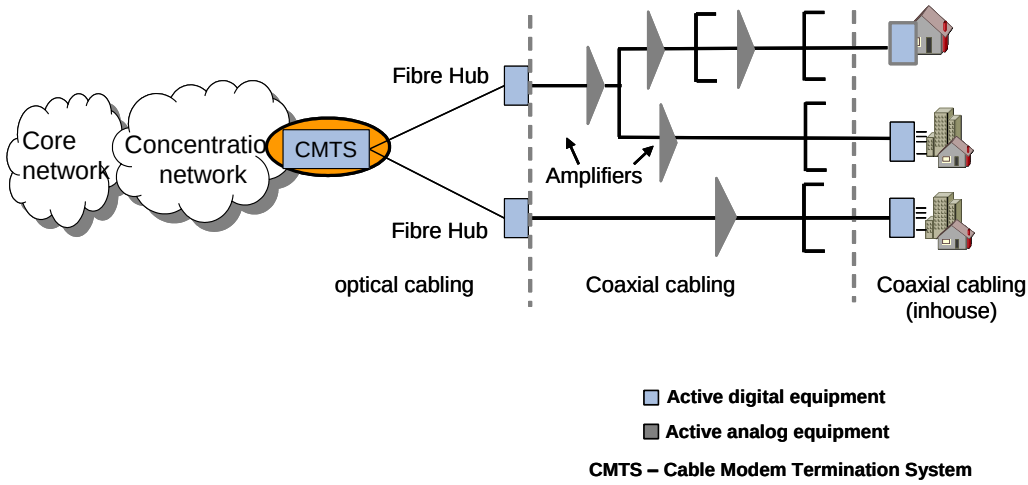
The traditional cable TV network was optimised to deliver one-way analogue broadcast TV services to cable network subscribers ("point-to-multipoint"). Due to implementation of new technologies, a modern cable network is capable of two-way communications and therefore cable operators are able to offer “triple play services” (i.e. voice, broadband access, and video services). Key elements of today’s cable networks are the

- Cable Modem Termination System (CMTS),

- "fibre hubs" (optical nodes), and
- the "drop cable segment".

Figure 7 provides an overview of the main characteristics of a "modern" cable infrastructure based on "Hybrid Fiber Coax (HFC)" network infrastructure and so called DOCSIS-technology[52].

Figure 7: Main characteristics of a HFC/DOCSIS cable infrastructure (stylized view)



Source: WIK-Consult

The "CMTS" is the "intelligence" for such a system; it is located at a central site. Each "fibre hub" defines a specific "cluster" of end user homes; fibre hubs usually are connected via a fibre ring. The "drop cable" segment covers the network part between a fibre hub and the end user households and it consists of coaxial copper infrastructure. A cable network infrastructure today therefore is a mixture of fibre and copper coaxial cables. **Within a given cable cluster, the available bandwidth provided by the spectrum is shared among all end users**. **EuroDOCSIS 3.0 technology** currently is able to deliver **100 Mbps and more**.[53] Technical progress as to DOCSIS capabilities is, however, very dynamic. It is therefore to be expected that substantially higher bit rates will be available downstream and upstream in the future.[54] Indeed, the upcoming

52 DOCSIS = Data Over Cable Service Interface Specification.

53 Most European cable infrastructure is presently implemented as EuroDOCSIS 2.0. However, migration towards the installation of EuroDOCSIS 3.0 is underway throughout Europe. It is the cable technology platform that competes most directly with fibre-based NGA technologies ("FTTx") presented in the preceding section. The cost of upgrading a DOCSIS 2.0 cable system to DOCSIS 3.0 is fairly small, however, such a migration marks a major leap forward in the performance of a cable network.

54 More information on technological and performance parameters of cable technologies as well as on the costs of upgrading a cable network is provided in Marcus, J.S. and D. Elixmann (2012): Re-thinking the Digital Agenda for Europe (DAE): A richer choice of technologies; study on behalf of

DOCSIS 3.1 technology promises speeds of 10 Gbps on the downlink and 1 Gbps on the uplink. Such solutions are likely to be introduced by the end of 2014 and for commercial deployments to get underway by the end of 2016.

As a side remark, cable networks have been historically reluctant to bid for State aid, also because cable networks often do not wish to grant wholesale access. This, of course may change in the future.

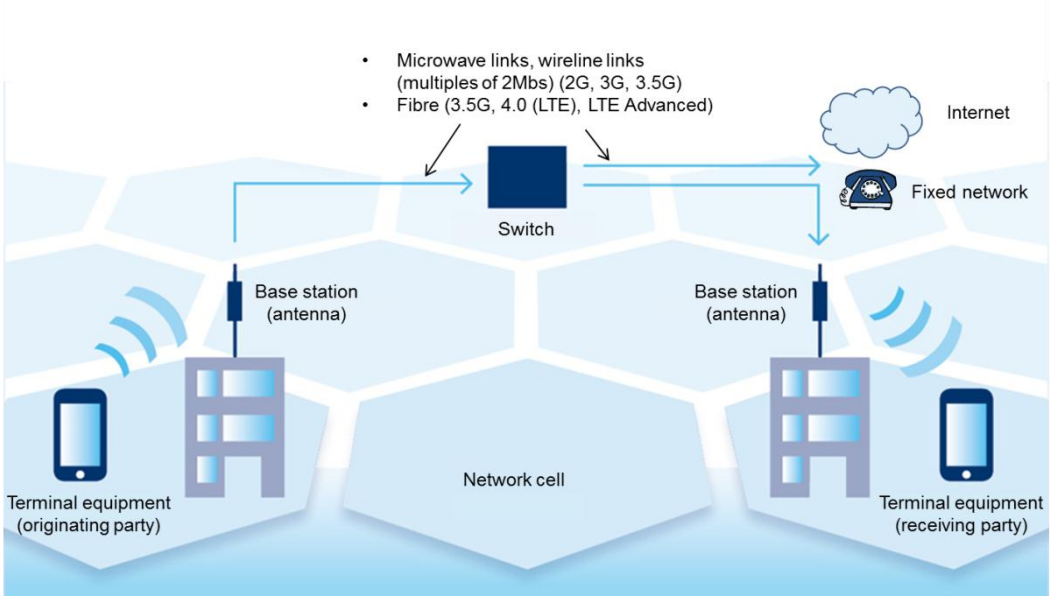
A-3.2 Wireless technologies capable of broadband communications

A-3.2.1 Mobile technologies

Basic network elements

A typical cellular mobile network rests on a „wireless“ (radio based) access network and a core network based on fixed (usually fiber) transmission links. The link between radio access network and core network (backhaul) can be based on microwave radio technologies but also on wired infrastructure (copper, fibre). Figure 8 illustrates these basic network elements of mobile communication.

Figure 8: The basic network elements of mobile communication



Source: WIK-C based on IZMF Information Centre for Mobile Communications (Informationszentrum Mobilfunk e.V.)

Liberty Global; September; available at: http://www.libertyglobal.com/PDF/public-policy/LGI-report-Re-thinking-the-Digital-Agenda-for-Europe.pdf.

2G, 3G, 3.5 G

Since the first roll-out of mobile networks in the late 80s/beginning 90s of the last century mobile technologies have experienced a very dynamic technological progress bringing about in particular more and more higher bandwidths. Indeed, the original GSM (2G) standard was able to support only voice communication; later on an extension of capabilities took place inasmuch as also (low bitrate packet based) data communication (EDGE) was enabled. The next big leap was the implementation of "3G technologies" (Universal Mobile Telecommunications System, UMTS) and "3.5 G technologies (High Speed Downlink (Uplink) Packet Access, HSDPA/HSUPA).

Being based on the first implementation of UMTS technology modern **"3.5 G technologies"** like HSDPA/HSUPA **deliver up to 14.4 Mbps downstream and up to 5.7 Mbps upstream**. Evolved HSPA technology even allows for 42 Mbps downstream as a shared medium. From a user perspective, the available bandwidths of HSPA technology will, however, remain limited. In all likelihood, in practice it will not deliver 30 Mbps, but remain clearly below 10 Mbps per user.

Long Term Evolution (LTE)

The "standard" technology for mobile broadband access "tomorrow" will be "Long Term Evolution (LTE)". LTE will be a major technological move of mobile carriers to serve growing customer needs requiring higher network speeds. **LTE base stations are likely to provide a nominal download speed of up to 100 Mbps per radio cell and an upload speed of up to 50 Mbps.**[55]

Mobile networks and effective bandwidths available

Against the backdrop of the aforementioned tremendous technical progress it is fair to state that the **bandwidths available for individual communication in mobile networks are likely to be (much) lower**. First, the available (cell) bandwidth is shared by all users in the same cell, i.e. the effective access speed for the individual user is a fraction of the speed mentioned above. Second, the effective speed at the edge of a radio cell only is a fraction of the access speed close to the base station.

A-3.2.2 (Fixed) Wireless access technologies

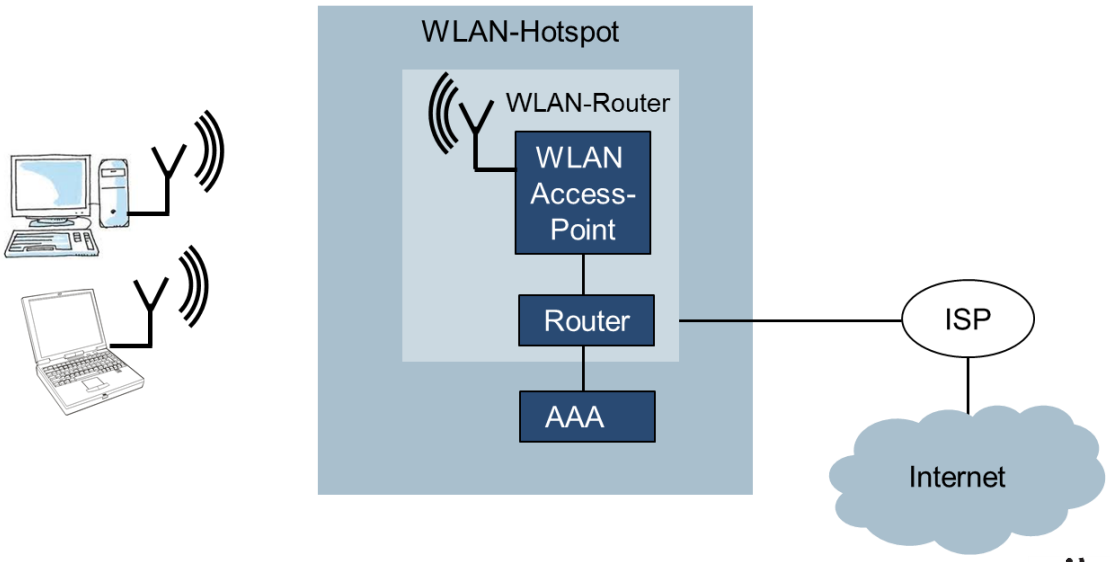
Regarding mass market there are two different standardized wireless access technologies in use today on the basis of which broadband Internet access can be implemented:

- Wireless LAN (WLAN) approaches, and
- WiMAX (Worldwide Interoperability for Microwave Access).

55 The successor of LTE, LTE Advanced, is already under development.

WLAN rests on an access point serving as a central base station to connect end-customers in an area with a radius of approximately 30 – 100 m as a shared medium. The "feasible" distance between end-customer and access point depends on the specific local circumstances, e.g. regarding line of sight, indoor conditions, and construction materials. Depending on the specific standard used WLAN theoretically is able to reach a bandwidth between 2 Mbps and appr. 300 Mbps; in practice, bandwidths are nearly half the size. Implementing WLAN technology is rather cheap, however, it cannot offer homogenous access speeds and a dedicated Quality of Service to the end-customers connected. It is fair to state that **WLAN is an access technology ideally suited for hot spots** like universities, libraries, railway stations, trains, airports and planes, restaurants and event locations, where nomadic end-customers stay for a while (because they are waiting, travelling, …) and can use their terminal systems. The following figure illustrates the basic elements of WLAN-based hotspot communication.

Figure 9: Main elements of WLAN-based communication at a hotspot [56]



Source: WIK-Consult on the basis of Elektronik-Kompendium; see http://www.elektronik-kompendium.de/sites/net/0904011.htm.

WiMAX, used as an access network technology, rests on central base stations serving the surrounding area in a shared manner. Thus, a **bandwidth of up to 75 Mbps (over short distances) is shared between the customers**. The available customer bandwidth also depends on the distance to the central base station. While in theory a coverage radius of 50 km is possible, requiring line of sight between the endpoints, in reality radio transmission is affected by buildings, trees, etc. and restricts coverage to a radius of appr. 3 km. Indoor coverage is even harder to achieve, if at all, thus, restricting

56 ISP = Internet Service Provider; AAA = Authentication, Authorization and Accounting.

the applicability of WiMAX in dense populated areas. In many cases the antennas have to be placed at a window and directed to the base station. Capacity and indoor penetration requirements may lead to the need for many base stations with small cells, making use of WIMAX potentially expensive. WiMAX is an access technology that does not offer homogenous services in its coverage areas. Ensuring coverage of all customer locations, especially in urban areas, can become expensive.

A-3.2.3 LTE advanced

Technological progress as to LTE is very dynamic and "LTE Advanced" is already under development. **LTE Advanced will allow to integrate fixed wireless infrastructures into the control logic of mobile networks**. Thus, LTE Advanced as a fixed wireless access technology uses the existing LTE network for also including terminal equipment in a non-mobile environment. Offloading traffic onto Fixed Wireless networks will increase mobile network capacity significantly. The transmission characteristics of this approach do not really differ from those of mobile communications, i.e. the bandwidth of the radio network will be shared between all users and depends on the number of users being "on air" in parallel and on the distance between terminal equipment and base station antenna. Also normal radio attenuation aspects as already mentioned above (indoor, line of sight, trees or buildings, …) have to be taken into account. In a fixed access application the indoor coverage can be improved by a fixed outdoor antenna aligned in the direction of the base station, which then serves the indoor network by WLAN or cables. **In theory, a user close to the base station can achieve up to 150 Mbit/s (today, in future up to 1 Gbit/s (LTE release 14)) downstream**, but this **bandwidth has to be shared** with all other users being active at the same time, independent of being mobile or "fixed". The higher the number of active users, the smaller the radio cells have to be in order to guarantee a minimum bandwidth at the busy hour, and, in turn, the higher the costs of such a network infrastructure.

A-3.3 Satellite broadband technologies

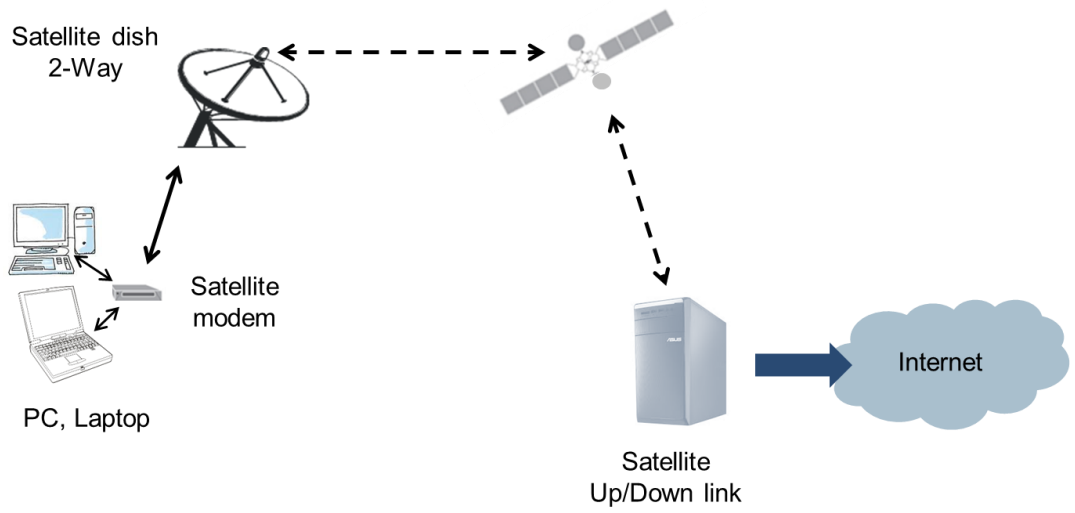
Originally, satellite technology has been designed as a broadcast medium: In principle the respective transponders deliver a portfolio of TV programs to all households in the specific area on earth that is covered (called a "footprint"). One-way Internet solutions – download of data via satellite and upload via telephony access line - have been the rule up until a few years ago. Today, satellite technology is also able to support two-way broadband communications.

There are quite a few operators in the world operating geo-stationary – i.e. located about 36,000 km above the earth's surface - satellite capacities. Several of them also have a footprint in (parts of) Europe. Important operators in Europe are e.g. Eutelsat and SES. Usually, satellite broadband solutions in Europe are provided to end users by

specific service providers which are using the facilities of a satellite operator and which are responsible for the actual access to the Internet.[57]

Internet via satellite requires suitable line of sight conditions between the satellite and the usage site (with the end user). As to the hardware, end users need a satellite dish with a suitable diameter (adequately positioned), a "Transmit and Receive Integrated Assembly" and a specific modem which is linked to the terminal equipment. In order to receive digital TV-programs with HD quality one needs in addition an interactive LNB (Low Noise Block) converter. **Satellite based Internet access solutions are currently offering download speeds of up to 20 Mbps and upload speeds of up to 6 Mbps.** Satellite broadband solutions are now **available in all 28 EU Member States**.[58] The following figure illustrates the main elements of satellite based Internet communication.

Figure 10: Main elements of 2-way satellite based Internet communication



Source: WIK-Consult, based on http://www.broadbandwatchdog.co.uk/satellite-broadband.php.

Advantages of satellite broadband include the relative low cost per user, which do not depend on population density, and a rather quick deployment. This makes **satellite broadband an attractive solution especially in sparsely populated or difficult to**

57 A list of service providers available across European countries can be found at www.broadbandforall.eu.

58 See the press release of the European Commission IP/13/968 of Oct. 17, 2013; available at: http://europa.eu/rapid/press-release_IP-13-968_en.htm. More background on satellite broadband is available on the Digital Agenda website https://ec.europa.eu/digital-agenda/about-satellite-broadband-all and on the website of the EU funded Saber project http://www.project-saber.eu/cms/documents/category/26-deliverables.

access (like e.g. valleys) **regions**. However, there are also some **satellite broadband limitations**. First, satellite broadband **does not allow massive downloading and video streaming** because – due to the limited overall capacity of satellite technology – there is a limitation on the monthly volume allowance. Second, using satellite technology for two-way and real time applications like (“fast twitch” or “first person shooter”) interactive gaming is a challenge because (twice) the distance between earth and satellite causes **relatively high signal delay times** (several 100 ms to 1.5 s).

A-4 The key criteria securing that your broadband deployment activity is "proportional"

In Section 4.3 you were referred to a set of conditions that must be fulfilled to demonstrate the proportionality of your measure. Failure to meet any of these conditions would most likely require an in-depth examination. This examination has to be carried out for every aid measure in broadband irrespective of whether it focuses on a white, grey or black area.

A-4.1 You have to conduct a "detailed mapping and analysis of coverage"

You have to carry out a detailed analysis and documentation of the present (and potential future) situation as to broadband provision in your area for the next three years. You have to provide evidence that the provision of broadband services in your area is insufficient. Thereby you have to **take into account both supply side and demand side aspects**.

As to the supply side, you should incorporate the planned deployment intentions of network operators and other investors. The required mapping should be done on the basis of homes passed by the network infrastructures that are relevant for your area and not on the basis of the actual number of homes or customers connected as subscribers. As to the demand side, you should be able to substantiate that the existing broadband provision does not meet the needs of private and business end users and that therefore there is a need for an improved broadband access in your area.

Of course, you might use any existing central or regional database that is suitable in this respect. Moreover, it might turn out that specific target areas eligible for State aid have already been defined in your country. In any event, you should contact the respective institutions in your country (National Regulatory Authorities, Ministries, broadband competence centers, etc.) and ask which information is already available and how you could get access to this information.

A-4.2 You have to conduct a "public consultation"

You have to conduct a public consultation, i.e. you have to **publish the relevant information on the main characteristics of your measure and on the concrete geographical areas to be covered by your project online for at least one month** and you should **ask for comments**. You should use a central web page at national level in order to maximize the reach of your information. You should in particular verify the results of the mapping process (see Section A-4.1) in the public consultation. Thus, you will minimise distortions of competition with existing providers and with those who already have investment plans. At the same time you may find out that there is no need for State aid to broadband, and you can find alternative uses for the budget foreseen.

That said, it is obvious that the mapping (see Section A-4.1) and consultation should lead to clear and sufficient information about existing infrastructures. Likewise, information provided on investment intentions of other entities should be as credible and plausible as possible as the risk exists that private investors express interest, yet, subsequently such investments do not take place. In effect, public intervention will be stalled and delivery of broadband services in your area is delayed. There are therefore **rules how to cope with unclear or insufficient information about the existing infrastructure** or possible incorrect broadband investment announcements.

In case of incomplete or unclear information you should contact the respective institution(s) in your country. In case your consultation yields neither replies from existing providers nor from entities with investment plans at all, you can normally go ahead, provided your consultation was carried out properly and the main stakeholders knew about it.

The **announcements** you receive **regarding upcoming broadband investments should be adequate to substantiate the commitments from the private investor(s)**. Such commitments should ensure that significant progress in terms of coverage will be made within the 3-year period or for the longer period foreseen for the supported investment. You could e.g. require a corresponding contract into which the respective operator(s) enter(s). Such a contract should outline the deployment commitments. It could foresee a number of suitable **milestones** which would have to be achieved during the 3-year period and reporting on the progress made. Such milestones could e.g. include:

- A concrete plan highlighting the progress in terms of coverage (as to territory and population);
- A credible business plan;
- Supporting documents like bank loan agreements;
- A detailed calendar deployment plan;
- A maximum time (e.g. 12 months) in which necessary permissions (e.g. rights of ways) should be obtained and the investment has to be started.

Of course, you are free to specify additional milestones on the progress of the private investor's measure and fix respective time periods (e.g. every 6 months). If a milestone is not achieved, you may then go ahead with your deployment plans. This rule applies both for basic and for NGA networks.

If you are uncertain about the real validity of the investment plans you receive you could also contact the respective institution(s) in your country. Overall, you should reserve "enough" time for the public consultation; at minimum there is a need of one month.

A-4.3 Your decision has to be based on a "competitive selection process"

Whenever you want to select a third-party operator to deploy and operate your (subsidized) infrastructure, your **selection process should be open and transparent**. You have to conduct it in line with spirit and the principles of the EU Public Procurement Directives. Transparency for all investors wishing to bid for the deployment and/or management of the subsidised project as well as equal and non-discriminatory treatment of all bidders and objective evaluation criteria (see Section A-4.A-4.4) are indispensable conditions. Often a competitive tender procedure is a suitable approach inasmuch as it reduces budgetary costs, minimises the potential State aid involved and at the same time reduces the selective nature of the measure insofar as the choice of the beneficiary is not known in advance. You should also publish the invitation to tender on a dedicated website at the national level.

A-4.4 You have to select the "most economically advantageous offer"

Within the context of a competitive tender procedure (see Section A-4.3), you should establish reasonable qualitative award criteria on which the submitted bids are assessed. Such award criteria may e.g. be based on the achieved geographical coverage, the sustainability of the technological approach or the impact of the proposed solution on competition. Such qualitative criteria have to be weighed against the requested aid amount. In order to reduce the amount of aid to be granted, at similar if not identical quality conditions, the bidder with the lowest amount of aid requested should in principle receive more priority points within the overall assessment of its bid. You have to specify in advance the relative weighting which you will give to each of the (qualitative) criteria chosen.

It should be clear from the outset that the "**most economically advantageous offer" does not necessarily require to have a look only at price and select the "cheapest" offer.** Rather, **price and indicators measuring the different quality aspects** of the offer **should be taken into account**.

A-4.5 Your tender has to be "technologically neutral"

It has been outlined in Chapter 2 and in Annex A-3 that a multitude of different technological solutions exists to provide broadband services. It is **important that your tender does not favour or exclude any particular technology or network platform**. Yet, you might very well define qualitative criteria in your tender like e.g. minimum up-load or down-load speeds and/or open access conditions. Given your precise specifications of such criteria, the bidders should be entitled to propose the provision of the required broadband services using or combining whatever technology they deem most suitable. On the basis of the objective award criteria referred to in Section A-4.4 you are then entitled to select the most suitable technological solution or mix of

technology solutions (wired, wireless, satellite) meeting your requirements. Failure to do so might put your project at risk.

A-4.6 Your project should make use of existing infrastructure

You can take for granted, that the costs of broadband roll-out can be reduced by already existing infrastructures that might be used. You should therefore **encourage bidders to have recourse to any available existing infrastructure** so as to avoid unnecessary and wasteful duplication of resources and to reduce the amount of public funding. Any operator which owns or controls infrastructure (irrespective of whether it is actually used) in your target area and which wishes to participate in the tender, should fulfill the following two conditions. First, it should inform you about that infrastructure during the public consultation. Second, it should provide all relevant information to other bidders at a point in time which would allow the latter to include such infrastructure in their bid. In this regard, you should make use of any national and or regional database on the availability of existing infrastructures that could be reused for broadband roll-out.

A-4.7 Your project has to meet certain requirements as to "wholesale access" as well as regarding wholesale access pricing

Your subsidised broadband infrastructure is required to offer effective wholesale access ("open access") for third parties. This is a very important criterion among the compatibility requirements. The rationale for this requirement is that third-party operators should be able to compete with the selected bidder (in particular when the latter is also present at the retail level), thereby strengthening choice on the end user side and competition in your area while at the same time avoiding the creation of regional service monopolies.

In view of the multitude of existing broadband technologies (see Section 2 and Annex A-3) you might ask yourself what actually constitutes effective wholesale access to your subsidized network? From a technical perspective there are two main alternatives: solutions resting on

- unbundling of infrastructure,
- bitstream access.

Unbundling: Depending on the actual broadband technology chosen (and its architecture) unbundling can take place at specific "nodes" of the broadband network in question. **Unbundling in principle means that a competitor leases an entire portion of raw copper cable or (unlit) fibre** – located between the network node selected and the end user - from your broadband network (operator). In order to set up an own business for end users, the competitor has to arrange for a physical transmission link from his network to the node in question, for respective co-location facilities, and for

specific own (DSL related or optical) equipment. In certain circumstances, virtual unbundling may be considered equivalent to physical unbundling.

Bitstream access: This is an active wholesale product enabling the provision of end user broadband access without owning and operating, respectively, the network infrastructure connecting the end user. Thus, it does not grant access to raw infrastructure, rather, the **bitstream access provider installs a high-speed access link to the end user premises and makes this access link available to access seekers**. Bitstream access is implemented at nodes of your network "farer away" from the end user compared to the unbundling case.

For NGA, effective wholesale access for third-party operators means that a subsidised network must offer access under fair and non-discriminatory conditions to all operators who request it and provide them with the possibility of effective and full unbundling. On the one hand, bitstream access should be possible and on the other hand third-party operators should have access to passive network infrastructure (e.g. as to ducts and poles, dark fibre). **Effective wholesale access to your subsidised infrastructure should be offered for at least a period of 7 years** (irrespective of the fact that the selected operator of your network might possess "significant market power" under regulatory terms). The right of access to ducts or poles should not be limited in time. In order to allow effective access, **the same access conditions shall apply on the entirety of the subsidised network, including those parts of the network where existing infrastructures have been used**. A potential later change in ownership, management or operation of the subsidised infrastructure does not release the operator of your network from the access obligations.

In case your State aid measure covers the funding of passive infrastructure elements (e.g. ducts, poles), access to those should also be granted and be unlimited in time.

Typically, the national Regulatory Authority and your national State aid contact point will be able to help you with the implementation of "wholesale access".

As to the **price setting for wholesale services** supplied over your broadband infrastructure you should be aware that it is not at the discretion of the entity operating the network. Rather, the prices to be charged **should be aligned with respective wholesale prices in your country**. In general, the wholesale access prices for the network you are supporting should be based on the pricing principles set by the National Regulatory Agency in your country and on benchmarks.

A-4.8 You have to fulfill specific duties regarding "monitoring" of your broadband project and you should be prepared that a "clawback mechanism" might apply

You are **obliged to closely monitor the implementation of your broadband project during the entire duration of the project**. Where the operator is selected on the basis of a competitive selection procedure, there is, however, typically less need to monitor the subsequent development of the profitability of the project. Projects in which the aid amount is fixed on an *ex ante* basis, typically provide incentives for the company to contain costs and to become more efficient over time.

You might provide for a balanced sharing of unanticipated gains brought about by your project, so you might wish to adopt financing models that use clawbacks to avoid over-compensation. In order not to put a disproportionally high burden on small, local projects a minimum threshold has been set, i.e. a **clawback mechanism should become relevant only for projects in which the aid amount is above EUR 10 million**. In such a case, it is up to you to set a reasonable clawback mechanism.

A-4.9 You have to fulfill specific duties in order to meet „transparency" and reporting requirements

You are obliged to provide entitled third parties with comprehensive and non-discriminatory access to information on your infrastructure (including, inter alia, ducts, street cabinets and fibre). This information should be regularly updated (for example every 6 months) and shall be available in non-proprietary formats. The rationale for this requirement is to enable other operators to easily ascertain the possibility to access such infrastructure. Moreover, if there is a **central register of broadband infrastructures in your country** (e.g. operated by the regulatory agency) you should **provide all relevant information about your broadband network to this database**. You should also inform yourselves about the existence of a **central website in your country**. In case it exists you should **provide at least the following information on your State aid measure**:

- the full text of the approved aid scheme and its implementing provisions,
- the name of the aid beneficiary,
- the aid amount,
- the aid intensity, and
- the used technology.

Such information shall be provided after the granting decision has been taken and it shall be kept for at least 10 years. This information will be available for the general public without restrictions.

As to reporting requirements, starting from the date when your network is put into use, for the duration of the aid measure, **you have to report regularly key information on your project to the European Commission via the respective competent national body in your country** (e.g. ministry).

European Commission

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