



## NGA BOTTOM UP MODEL

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### Short instruction

This document is meant as one of possible models for designing a Public-private partnership for the development of broadband projects. Some parts of the documents are related to the rules that apply to the member states of the European Union, but are suggested as a good practice also to others. The readers are invited to use this document as a template, by filling the specific content in the spaces that are marked in the document, and subsequently deleting the descriptive texts, that are present in the model to assist the user while filling in the content. Some parts, necessary for the completion of the document, are specific to the national legislation and rules. Users should turn to consultants and/or to the national centres of excellence on broadband tematics, to dutifully complete the model and to make it executable in a single state.

### Definition and Delimitation of PPP/ Bottom up model

There is a great variety of definitions for PPP available worldwide. The contents and objectives may vary according to the country specific background and the specific interests of the individual author. Some academic and industrial practitioners still regard the definition of PPP as being very ambiguous. In some cases, the term public-private partnership describes a wide range of arrangements whereby government responsibilities are outsourced to commercial partners, and risk is shared between the public and private sectors to bring about desired outcomes in areas associated with public policy.

As one example, the official definition of PPP by the “Federal Report on PPP in Public Real Estate, Part I: Guideline”, commissioned by the German Federal Department of Transportation, Construction and Real Estate (BMVBW) in 2003, is as follows:

“The term PPP refers to a long-term, contractually regulated cooperation between the public and private sector for the efficient fulfilment of public tasks in combining the necessary resources (e.g. knowhow, operational funds, capital, personnel) of the partners and distributing existing project risks appropriately according to the risk management competence of the project partners”.

In addition, there are four main characteristics of PPP:

- efficiency gains through appropriate sharing of risks and responsibilities; the public sector retains mainly sovereign tasks and the private bears those for implementation;
- lifecycle and private investment as crucial elements of PPP’s incentive structures;
- long term contractual relationship; and
- innovation, in particular through output specification, service levels and payment mechanisms, as a new way of describing the services to be supplied.

One of the major objectives of PPP is to transfer tasks and responsibility for the provision of infrastructure to the private sector, in order to gain efficiency, cost reliability and financial security. The traditional procurement of public infrastructure and its related services has given way to the private sector assuming responsibility for design, construction, operation, management, maintenance and finance, with the public sector as the customer or, sometimes, as the direct user, paying for the provision of a service. The public sector, nevertheless, should not lose its sovereign task such as assessing and determining infrastructure needs, monitoring and supervising of an efficient and competitive procurement system, and assuring all required environmental and safety standards in the service delivery.

The principal aim of PPP here is to involve the private sector in the provision of public services, shifting the role of the public sector from the owner and provider to purchaser and guardian of the interests of the public. It is driven by the belief that the public sector should focus on its core functions, leaving the private sector to perform those functions which it can often do more cost effectively and efficiently. One of the key political drivers behind the PPP is the desire to improve the nation's infrastructure and supporting public services without placing undue strain on scarce public funds and without having to increase taxation.

## THE BOTTOM UP APPROACH

### SHORT DESCRIPTION

The bottom-up, or local community, model involves a group of end users (comprising local residents and/or businesses) organising themselves into a jointly owned and democratically controlled organisational group (frequently a co-operative) capable of overseeing the contract to build their own local network. In this model it is likely that the public sector has no role in owning or running the project, but rather passes the funding to the group itself to oversee the investment project. Given the composition of the local group it is likely that the day-to-day running of the network will be outsourced to a telecoms operator with the necessary expertise. We have identified example projects which have implemented bottom-up models from both a local point of view, and also as part of larger-scale (regional) initiatives. Bottom-up funded projects tend to be of a smaller scale than projects that use the other funding models outlined below.

### *Advantages of bottom-up model*

- As the investment is generally undertaken by non-profit organisations comprising end users, it is usually considered on a long-term basis and so high-bandwidth infrastructure (such as fibre to the home) can be deployed which provides the highest level of future-proofing.
- Co-operative organisations have the effect of generating and aggregating demand in an area, which ensures that maximum social benefit is derived from the investment, even if only a small amount of funding is available.

### *Disadvantages of bottom-up model*

- This approach may not be suited to providing widespread coverage, as individual projects can be very localised. This may mean that some areas are missed out and those networks that are built have differing technical standards, which may mean that competition from other operators is limited.
- The co-operative/partnership organisations are unlikely to have specific telecoms network expertise, and so high-cost 'turnkey' solutions may be required.
- If the funding is to come from the end users themselves, then producing this funding upfront may create a barrier. In this case, the public sector can help by guaranteeing or underwriting loans.

Overall, the bottom-up model should be used for targeting localised areas and for gaining the most benefit from small amounts of funding.

Below is illustrated of how the bottom-up model has been used by some of the example projects.

#### **OnsNet, Nuenen, Netherlands**

The Nuenen project was started through the creation of the Nuenen Internetco-operative, where members were given the opportunity for an FTTHconnection. It was considered advantageous for local citizens if the Internet was to be turned into a utility – with ownership falling on either the government or the local population itself.

Following a six-week demand aggregation programme, an independent local co-operative was created to build and own the network, and a business plan submitted to the Ministry of Affairs. By the end of the six-week period around 90% of the area's population had joined the co-operative. The cooperative supplied its members with free triple-play broadband for the first year, followed by a charge of EUR60 per month thereafter. The network was operational after five months and following the first year's free period 80–85% of the citizens continued to use the service. In addition, recent research has shown how this project has helped aid social cohesion throughout the co-operative's members.

Due to the co-operative's lack of expertise it decided to outsource both the building and operation of the network. A turnkey solution was required for building the network, and a construction company was chosen that offered this. For network operation, the co-operative undertook an outsourcing arrangement with Edutel, an existing semi-public telecoms operator affiliated with a number of high schools in the area.

Many of the technological choices were driven by the co-operative's aims of achieving 'the best of the best', and supported by the co-operative investment model being able to take a longer-term view of benefits rather than just focusing on a short-term business case and the reduction of costs.

Rural Development Programme, Sweden Under the Rural Development Programme in Sweden, a typical local investment project was initiated by residents and enterprises showing interest and forming into co-operatives or economic

associations. These organisations applied to the local authority (county board) for support, and contributed either financial support or support in kind (often digging to install new ducts). While the private contribution was non-compulsory, a public grant was more likely to be awarded if interest in local investment was demonstrated. Due to this additional investment, a local model was seen as a good way to scale up the initial investment. The public money given to these projects was made up of

75% EU funding and 25% other public funding.

An advantage of the co-operative structure was that one of the key cost-saving elements came from easier access to private land, due to the local initiative and investment in the project. However, it was

agreed that one of the downsides of allowing grant money to be directed through local interests was that less organised or more sparsely populated rural areas may miss out on grants, and that those networks that were built may not have common technical standards. This was not seen as a major problem, however, and it was felt more important to ensure the money was going to an entrepreneurial

region with proven demand.

The grants tended to fund access networks rather than core networks, as local groups tended to be interested in projects that offered an appreciable benefit to end users. In the majority of cases the local group owns the resultant infrastructure, but occasionally the local group was allowed to sell the infrastructure to a third party (though specific market mechanisms had to be used to ensure a fair price). The network itself was run by an independent telecoms operator as a condition of the grant being awarded.

Another important part of this project was the partnership between the regulator and a non-telecoms

department: the project was the first to involve co-operation between the Board of Agriculture and the Swedish postal and telecoms regulator (PTS), with PTS helping to design the scheme and the Board

of Agriculture undertaking marketing and information. This enabled the Board of Agriculture's rural expertise to be complemented by the PTS's expertise in broadband. The actual implementation was done regionally by the County Administrative Boards, who allocated the money to the local cooperatives.

### **eRegio, North Karelia, Finland**

A bottom-up approach features in the composite funding model of this example project. Public funding is given to a telecoms operator as a grant for it to build the core infrastructure (i.e. a private DBO approach, as explained in the next section). However, the backbone that is built has to reach within 2km of each house, with the last-mile access being financed by individual households (i.e. a bottom-up approach, and in reality the distance to the backbone is much less). Each household signs an agreement, and provides payment, at the time of the project initiation so that all the fibre can be laid at the same time. It was highlighted that a key driver of people signing up was being able to see the

construction happening outside their houses, and the additional incentive was that while houses are able to buy access after the project has finished it will cost them significantly more. An improvement



to the model has been implemented in the successor project, “Broadband for all in Eastern and Northern Finland”. In the new project, surveys are run to check the demand before construction starts in each area. However, as only price estimates can be used to gauge demand, the response may vary from reality given variance of the actual price. The real demand is only realised once the project is underway, with the ‘excavators on the ground’ effect that was highlighted above.

Source: [http://ec.europa.eu/regional\\_policy/sources/docgener/presenta/broadband2011/broadband2011\\_en.pdf](http://ec.europa.eu/regional_policy/sources/docgener/presenta/broadband2011/broadband2011_en.pdf)  
Guide to broadband investment 2011,

## NGA specific administrative and technological requirements

The following chapter is mandatory for EU member states, but is recommended as a good practice also to the others.

The main issue in this part of the document is related to the general rule that regular market/economic activity should not be harmed by employing public financial sources. To be short, the regulations about public aid allow public intervention only in cases of market failure. The market failure identification process differs in terms of obligations, based on the chosen capacity of the network.

## White, black and all between

The distinction between white, grey and black areas for NGA (and Ultrafast) networks is not a simple task. Or to be more precise, white is white, black is black, trouble comes from what's in between, as the reader will see in the following section. The process of defining the areas is called (white, grey and black area) mapping.

To avoid problems with (State aid) compatibility related to the internal EU market under Article 107(3)(c) of EU Treaty, the distinction between 'white', 'grey' and 'black' areas is relevant, as defined in the Guidelines for financing broadband (2013/C 25/01).

## Steps of the mapping process

- 1) For the purpose of identifying the geographical areas as white, grey or black as described below, the aid granting authority needs to determine whether broadband infrastructures exist in the targeted area
- 2) .
- 3) In order to further ensure that the public intervention does not disrupt private investments, the aid granting authorities should also verify whether private investors have concrete plans to roll out their own infrastructure in the near future. The term 'near future' should be understood as referring to a period of 3 years. If the granting authority takes a longer time horizon for the deployment of the subsidised infrastructure, the same time horizon should also be used to assess the existence of commercial investment plans.
- 4) To verify that there are no private investors planning to roll out their own infrastructure in the near future, the aid granting authority should publish a summary of the planned aid measure and invite interested parties to comment.

There exists the risk that a mere 'expression of interest' by a private investor could delay delivery of broadband services in the target area if subsequently such investment does not take place while at the same time public intervention has been stalled. The aid granting authority could therefore

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require certain commitments from the private investor before deferring the public intervention. These 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. It may further request the respective operator to enter into a corresponding contract which outlines the deployment commitments. This contract could foresee a number of ‘milestones’ which would have to be achieved during the 3-year period and reporting on the progress made. If a milestone is not achieved, the granting authority may then go ahead with its public intervention plans. This rule applies both for basic and for NGA (and for Ultrafast) networks.

### White areas

‘White areas’ are those in which there is no broadband infrastructure and it is unlikely to be developed in the near future.

### Grey areas

‘Grey areas’ are those in which one network operator is present and another network is unlikely to be developed in the near future.

The mere existence of one network operator does not necessarily imply that no market failure or cohesion problem exists. If that operator has market power (monopoly) it may provide citizens with a suboptimal combination of service quality and prices. Certain categories of users may not be adequately served or, in the absence of regulated wholesale access tariffs, retail prices may be higher than those charged for the same services offered in more competitive but otherwise comparable areas or regions of the country. If, in addition, there are only limited prospects that alternative operators enter the market, the funding of an alternative infrastructure could be an appropriate measure.

What is usually observed in practice, market failures often demonstrate a situation where some users in an area have broadband connectivity, but others don’t. This kind of “spotty” coverage is the example of non adequately served area.

On the other hand, in areas where there is already one broadband network operator, subsidies for the construction of an alternative network could distort market dynamics. Therefore, State support for the deployment of broadband networks in ‘grey’ areas is only justified when it can be clearly demonstrated that a market failure persists. A more detailed analysis and a thorough compatibility assessment will be necessary.

### Black areas

When in a given geographical zone there are or there will be in the near future at least two basic broadband networks of different operators and broadband services are provided under competitive conditions (infrastructure-based competition), it can be assumed that there is no market failure. Accordingly, there is very little scope for State intervention to bring further benefits. On the contrary, State support for the funding of the construction of an additional broadband network with comparable capabilities will, in principle, lead to an unacceptable distortion of competition, and the

crowding out of private investors. Accordingly, in the absence of a clearly demonstrated market failure, the Commission will take a negative view of measures to fund the roll-out of an additional broadband infrastructure in a 'black area'.

At present, by upgrading active equipment, certain advanced basic broadband networks can also support some broadband services which in the future are likely to be offered over NGA networks (such as triple play services) and thereby contribute to meeting the DAE targets. However, novel products or services which are not substitutable from the perspective of either demand or supply may emerge and will require capacity, reliability and substantially higher upload and download speeds beyond the upper physical limits of basic broadband infrastructure.

### NGA and Ultra-fast shades of gray

The definitions in this section apply to both NGA and Ultra-fast networks, as the Guidelines for financing broadband (2013/C 25/01) distinguishes mainly between basic and all the rest in terms of mapping requirements.

#### White NGA (and Ultra-fast) areas

For the purposes of assessing State aid for NGA networks, an area where NGA networks do not at present exist and where they are not likely to be built within 3 years by private investors, should be considered to be a 'white NGA' area. Such an area is eligible for State aid to NGA provided that other compatibility conditions are fulfilled.

#### Grey NGA (and Ultra-fast) areas

An area should be considered a 'grey NGA' area where only one NGA network is in place or is being deployed in the coming 3 years and there are no plans by any operator to deploy a NGA network in the coming 3 years. In assessing whether other network investors could deploy additional NGA networks in a given area, account should be taken of any existing regulatory or legislative measures that may have lowered barriers for such network deployments (access to ducts, sharing of infrastructure, etc.).

If only one infrastructure is present, even if this infrastructure is used — via local loop unbundling (LLU) — by several electronic communication operators, such situation shall be considered to be a competitive grey area. It is not considered as a 'black area' within the meaning of the Guidelines for financing broadband (2013/C 25/01).

The same company may operate separate fixed and wireless NGA networks in the same area but this will not change the 'colour' of such area.

State intervention in such areas carries a high risk of crowding out existing investors and distorting competition.

### **Black NGA (and Ultra-fast) areas**

If at least two NGA networks of different operators exist in a given area or will be deployed in the coming 3 years, such an area should be considered a 'black NGA' area. State support for an additional publicly funded, equivalent NGA network in such areas is likely to seriously distort competition and is incompatible with the internal market under Article 107(3)(c) of the TFEU.

In 'black NGA' areas, such intervention could only be allowed if the 'step change' is proved on the basis of the following cumulative criteria:

- (a) the existing or planned NGA networks do not reach the end-user premises with fibre networks;
- (b) the market situation is not evolving towards the achievement of a competitive provision of ultra-fast services above 100 Mbit/s in the near future by the investment plans of commercial operators;
- (c) there is expected demand for such qualitative improvements.

In light of the Digital Agenda objectives, in particular achieving 50 % penetration to Internet connections above 100 Mbps, and taking into account that especially in urban areas there may be higher performance needs compared to what commercial investors are willing to offer in the near future, public intervention could exceptionally be allowed for NGA networks able to provide ultra-fast speeds well above 100 Mbps.

In other words, such funding would have to lead to a significant, sustainable, pro-competitive and non-temporary technological advancement without creating disproportionate disincentives to private investments.

### **Technical design of the output**

Because of the requirements of technological neutrality technical design of the outputs can be defined only as needed capacities (partly discussed in previous paragraph), desired network topology (tree structure, mesh structure, ring structure, etc). Network delay (processing, queuing, transmission, propagation delays) or latency need to be defined but again they are technology dependent.

Open access network have a big specifics deriving from the facts that many data traffic flows converge through the same active equipment, unless is of collocations type. QinQ capabilities advances multicast and strict VLAN isolation functionalities must be required.

### **Quality of output**

Quality of outputs is the result of two groups of factors:

- Design/topology/technology choices about the network (redundant connections, ring topology, failover software protections etc).
- Operational decisions. (How many people will be assigned to problem solving? How quick they will respond etc).

We can discuss of the general requirement (like availability 99,8%), at the point where defining the desired quality; however, we must be aware of the fact, that higher availability induces higher

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operational costs. It is wiser to use prospected availability of the network as one of evaluation criteria. Different levels of service level agreement (SLA) are usually contractually granted on top of basic network performance. By defining network capacities (as define in overall specification we do not necessarily grant the bandwidth, as it is common for telecommunication networks to have traffics with different quality of service (QoS) levels. It is important that the network supports QoS.

## Project output definition

### Project description

**Provide a description of the project in the text box. Extend the text box as necessary.**

**Sample content:**

The importance of broadband infrastructure is internationally confirmed by the activation of various advanced countries, which take initiatives to develop appropriate broadband infrastructure, adapt an alternative way to develop their economy and overcome any "technological blockades" of their citizens. Apart from providing basic services to citizens and businesses, there are various reasons and motives for which the public sector has to decide to invest in broadband, whether to develop networks or provide services. The most important are: promotion of economic development, revenue increase, services in suburban and rural areas, e-government services, public security services and applications that make efficient routine services provided by local or regional authorities.

The basic idea of this project is the development of an ultra fast (100/50) fibre optic broadband infrastructure in suburban and rural areas, and depending on case, either by the construction of new networks in rural areas or by the expansion of existing networks (Broadband Metropolitan Area Networks, BMAN) in suburban areas. In particular for the second case it is significant to exploit the large number of BMAN that have been developed in municipalities, using the fibre optic technology as the "communication avenue" for the next decades. While high-bandwidth access is common in population-dense areas, remote areas sometimes lack acceptable access levels. Existing copper networks in most cases cannot be upgraded, as a result of physical limitations due to attenuation with the increasing length of the local loop.

Regarding fibre, especially the high construction costs within the remote and rural areas, where no high speed Internet access is available, are at odds with the actual depreciation periods of investment projects. The project will focus on "white areas", where there is no broadband infrastructure and it is unlikely to be developed in the near future. In some areas depending on the geographical area and the coverage of the project, "grey areas", where one network operator is present and another network is unlikely to be developed in the near future, may be included.

The project is expected to substantially contribute to the following objectives:

- Adequate broadband coverage of white remote areas, in order to gradually achieve the goal of “total broadband coverage” set in the digital agenda 2020. The high population coverage should be considered as a key priority in the short term, but the broad geographical coverage is also critical in order to achieve access to broadband services for the total population by 2020.
- Ability to provide reliable and affordable broadband service to end users (in terms of speed, quality and price). In particular, the services should be comparable to those provided at more advantageous areas, thereby minimizing the risk of creating a new “broadband gap” in the future.
- Development of a strong and durable in time network infrastructure that could support the medium-term and long-term goals of penetration, as well as the anticipated gradual increase of speed of service, according to Agenda 2020, with confidence to the initial investment. Providing a long-term solution that will have the ability to upgrade and evolution over time.
- Substantial capacity to encourage competition and prevent any single provider by acquiring special advantages over others. Sufficient State control of the operating principles of the network.
- Encouraging and facilitating existing network providers to choose and implement their own strategy, with regard to possible additional private investment in these regions.

The main scope of the project is to extend broadband coverage to underserved communities, and the financing approach is to encourage the private sector to develop rural broadband infrastructure. According to the international experience, independent of the national strategy for the deployment of fibre optic infrastructure, there may be an involvement of the regional and local authorities in relevant issues; either in developing the policy and strategy to be adopted (especially in rural and suburban areas), or in seeking subsidies, or in forming partnerships with telecom operators, etc. In places where building an FTTx infrastructure with wide coverage is not seen as viable and the private sector is reluctant to invest, there is a clear role for the local government to support and facilitate, and possibly (co-)invest in the deployment of such networks. That does not mean, of course, that local governments should be elevated to telecom operators. Their role only lies in facilitating the deployment of open access infrastructure and ensuring that all can use them to offer telecommunication services. There are several ways that local government can be involved in the deployment of FTTx networks, ranging from just enabling and facilitating other to do it to building a totally public network. But in most cases a more balanced approach is used where the public and private sector partner to build the FTTx infrastructure. The local government forms a kind of cooperation with the private sector. This happens because, in most cases, and especially in rural areas, such an investment is not justified for the private sector, and some public funding is needed. Similarly, the local government or the public sector in general, cannot dispose the whole fund for such a big project. The way forward is to form a public-private partnership that can stand on the fund (both public and private) to build the infrastructure. In most cases the partnership may lease the infrastructure to network or service providers in order to balance the investment.

Also in most cases, the infrastructure is neutral, which means that it is available to reasonable price to all that request it, including service providers that may offer their services (including Internet access) to the citizens. This is usually a requirement for the building of the broadband infrastructure due to the public co-financing. In order to ensure fair competition, the infrastructure has to remain neutral and be offered at a cost-oriented rate to all.

There is no single model that suits every situation, and a Managing Authority must consider the pros and cons of each model and how it might fit the Authority's current situation. Five investment models (Private DBO, Public DBO, GOCO, PPP Joint-Venture, Bottom-up) that have potential use for broadband projects in Europe will be studied.

The main focus is the construction of sustainable high-capacity fibre networks to the customer (citizens and businesses). Broadband access is intended to stimulate the development of services, applications and content while providing a safe speed broadband access to Internet, modern online public services, electronic government (e-government), electronic learning services (e-learning), electronic health services (e-health), dynamic environment for electronic business (e-business), secure information infrastructure, mass availability of broadband access at competitive prices, benchmarking progress and dissemination of good practices.

Additionally, according to the "EU Guidelines for the application of State aid rules in relation to the rapid deployment of broadband networks", the new subsidized network must respect the compatibility conditions, which in bullets are the following:

- Detailed mapping and analysis of coverage
- Public consultation
- Competitive selection process
- Most economically advantageous offer
- Technological neutrality
- Use of existing infrastructure
- Wholesale access
- Wholesale access pricing
- Monitoring and clawback mechanism
- Transparency
- Reporting
- Fair and non-discriminatory treatment

#### EXPECTED CONTENTS AND SPECIFIC NOTES:

The objective of this section is to "sell" a project idea and provide the most important information on a project. The scope of this section is only to present an executive - predominantly non-technical - summary of the project and its context. Detailed technical information should be provided later, repetition of the information should be avoided and detailed information presented in the relevant sections below. Please make sure that all information presented are consisted across the application

and associated documents. Please also keep the same structure and wording, particularly with regard to the project components, contracts etc.

Project description should include information on:

- Sector addressed by the project, the beneficiary region/county (including the beneficiary region/county and the population).
- Project concept - scope of the project and its costs, type of infrastructure to be built. Make it clear and specific if it concerns basic and/or next generation broadband or if a hybrid solution is envisaged. Type of services to be offered should be generally described (keep details for the next section);
  - Current situation on broadband in the project area, with a particular focus on problems and gaps. Show that this project is designed to solve the problems and gaps described and to which extent. Please make sure that the scope of the project is adequate and proportional to the problems identified.
  - Rationale for the project: refer to Digital Agenda / national and regional broadband strategies. Mention that the proposed project is consistent with / designed to contribute to the above mentioned national and EU targets. If applicable, underline that the network is designed to be future proof and can meet future demand. Refer to the relevant Operational Programme and related eligibility and selection criteria.
  - Concise presentation of the legal and institutional aspects – mention the involved stakeholders and foreseen institutional set up. In this part in particular describe the nature of the public sector involvement, i.e. **whether the joint venture** will be based on joint investment, or the establishment of a new start up; if it is a new start-up whether the finances will be gathered through other public companies, or will the municipality directly participate in the ownership of the new company.
  - Provide information on the location of the project (including relevant maps of foreseen infrastructure vis-à-vis the mapping of white, grey and black areas). Alternatively, reference that maps are provided in following sections, or consider to attach the maps as an annex, in case the material provided is extensive.

**Where the project is a phase of an overall project, provide a description of the proposed stages of implementation (explaining whether they are technically and financially independent) in the text box. Extend the text box as necessary.**

### Sample content

Broadband network build through PPP will be technologically independent. The topology of the network should be based on solutions that build network is completely independent and can be easily connected to other existing infrastructure in near regions. Only by that way, this network will provide benefits to the final beneficiaries. Financial resources should be sufficient for complete network build.

In next steps feasibility should focus on connecting through backbone to other potential networks for easy forming of regional broadband network. As size matters also when speaking about costs, both initial investment and operational, it can be easily demonstrated that designing regional networks makes (financial) sense. When funding with EU funds, the problem is usually that the beneficiary of the funds is a local community (municipality), and this makes problems to justify to extend the project out of the physical borders of that community. It's certainly a good practice to design a wider idea (at a regional level) and then to deliver the picture to municipalities, that have to conform to that bigger picture.)

Regional broadband network can provide a huge and contribution to the Digital Agenda and national strategies. Local example of successful implementation can be great impact to others to follow.

### EXPECTED CONTENTS AND SPECIFIC NOTES:

The term “phase” in this context is applicable in cases where larger infrastructure project is divided in smaller sub-projects according to functional units.

**What criteria have been used to determine the division of the project into phases? Describe these criteria in the text box. Extend the text box as necessary.**

#### EXPECTED CONTENTS AND SPECIFIC NOTES:

Plausible reasons for division of the project into phases or stages need to be provided. This may include: stage of project development cycle (e.g. for some parts of the projects documentation is advanced while some others are lagging behind due to some difficulties, like unresolved environmental concerns), administrative capacity (division of project in manageable, less risky packages), financial affordability (available funding), operational reasons (avoid too many disturbances), other.

Please provide a clear identification of these packages or a Work Breakdown Structure (WBS). The WBS is a core project management tool that decomposes the project into deliverables, smaller project packages and its corresponding activities, setting the foundation for the further planning and implementation. According to standard project methodologies it can be product or process (generic life cycle phases) based.

In general the practice of division of the project on phases depends on the industry. In the case of capital intensive projects which require construction work as is the case with the deployment of broadband in rural areas, the best practice in project management<sup>1</sup> recommends the use of **product based work packages**. The recommendation applies regardless of the model or technology deployed.

Special care should be devoted to the possibility of artificial splitting of the project (so called salami-slicing). This may be done to avoid certain thresholds which are applied in the environmental impact assessment, or in approval process or in procurement.

If the object of analysis is not clearly identified, raising questions about artificial or unmotivated phasing, there is risk of delays in the approval process.

### Technical description of the investment in infrastructure

**Describe the proposed infrastructure and the work for which assistance is being proposed specifying its main characteristics and component elements in the text box. Extend the text box as necessary.**

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<sup>1</sup> Ibid, p.119

Sample content:

Outcomes from the mapping-Should map the area either there exist certain infrastructure. White areas are those which there is no broadband infrastructure and it is unlikely to be developed in the near future-near future is a 3-year period.Grey areas are those which one network operator is present and another network is unlikely to be developed in the near future. This does not necessarily imply that no market failure or cohesion exists. If there exists some monopoly status- non adequate market conditions-suboptimal services, alternative is to fund alternative infrastructure. Grey areas could be eligible for State support.Black areas- no need for State intervention-when in given geographical zone there are or there will be in the near future at least two basic broadband networks of different operators or broadband services are provided under competitive conditions it can be assumed that there are no market failure.

Broadband network should be build with technical characteristic that it is technology neutral and it can be easily upgradable to higher network accesses. This type of network can provide base for further development of open access network, that is most appropriate type suggested by the Digital Agenda and Operational Programme.

EXPECTED CONTENTS AND SPECIFIC NOTES:

This section needs to present the preferred option and needs to be detailed enough to allow judgement about:

- consistency with project's needs and objectives;
- cost benchmarking;
- compliance with technical regulations, standards and agreements.

Technical description should include:

- Description of the locations for implementation (map(s) – if not already provided in another section
- Design standards/ specifications
- The network design and topology assumptions and the reasons behind it should be clearly explained (e.g. the geography of the region, the services finally rendered, etc.)
- The description of each project elements (e.g.: network management center; fibre optic networks, backbone / distribution nodes, etc.), which should be as specific as possible.
- How the project meets a requirement not to overlap existing infrastructure, open access, wholesale access, technology neutrality
- The outcomes of the mapping exercise (Black-Grey-White areas) vs. the scope of the project should be presented
-

This section should also include a concise presentation of any relevant operational aspects, e.g. if the project foresees organizational division of public administration network, please provide such explanation.

**Sample content:**

**The key outputs indicators are the following;**

- **Average network delay.** The delay of a network specifies how long it takes for a bit of data to travel across the network from one node or endpoint to another. It is typically measured in multiples or fractions of seconds. Delay may differ slightly, depending on the location of the specific pair of communicating nodes. Although users only care about the total delay of a network, engineers need to perform precise measurements
- **Average network jitter.** Jitter is the undesired deviation from true periodicity of an assumed periodic signal in electronics and telecommunications, often in relation to a reference clock source. Jitter may be observed in characteristics such as the frequency of successive pulses, the signal amplitude, or phase of periodic signals. Jitter is a significant, and usually undesired, factor in the design of almost all communications links. In clock recovery applications it is called timing jitter. Jitter can be quantified in the same terms as all time-varying signals, e.g., RMS, or peak-to-peak displacement. Also like other time-varying signals, jitter can be expressed in terms of spectral density (frequency content).
- **Download/upload ratio:** Upload speed is the speed at which the data can go from your computer and be sent to the internet. Download speed is the speed at which data can be downloaded from the internet to your computer. In the past, as most users were using the content that resided somewhere in the core internet, the download speed was acceptable to be many times bigger than upload speed. With recent applications (cloud storage for example) the upload speed is becoming more and more important. By setting the rules about the the D/U ratio, there is a risk to break the technology neutrality rule. Therefor the approach of not announcing a download speed bigger than a specified ratio in comparison to the upload speed is a good approach (even if download can be higher, the announced speed should be at maximum a certain multiple od upload, to prevent end user misunderstanding). A Danish good practice set the acceptable D/U ratio to 2:1.

- **Capacity to the end user:** Capacity to the end user can be set as an output indicator, and is usually expressed in megabits per second. It usually regards download speed (from network to the end user), and should be combined with the previous point. Attention must be put to the difference between GRANTED capacity and MAXIMUM capacity. In commercial terms, the maximum capacity is usually communicated to the users, with no or little granted capacity, due to the oversubscription of upstream links. Granted capacity is usually reserved to business-to-business connectivity, often linked to the so called SLA (Service level agreement) contracts. This issue is becoming more and more important, as always-on end user services are more and more popular. The big question is also for which part of the network the capacity is stated. Usually the operators declare the capacity only for the last part of the network (between the user and his access node), but the user experience is usually heavily impacted also from the capacity (shortage) of the connectivity from the access node towards the core networks.
  
- **Functionality:** by defining functionality to the end user that the network must offer, we can usually ensure validity through time (setting speed becomes obsolete in few years). It's common to set as requested the triple-play functionality, with the possibility for the end user to have 2 (or more) concurrent HD streams, interactivity with video content, and similar. Scalability (increasing functionality in the future) can also be requested. If functionality, in combination with scalability, is reasonably set, then technological neutrality should not be a problem.

The level of detail provided in this section has to be balanced. As already pointed out it should only be a summary of the technical and financial details provided in the design and feasibility documents, not the in-depth description which is already provided in other documents.

**In respect of the work involved, identify and quantify the key output indicators and, where relevant, the core indicators to be used. Fill it in the text box. Extend the text box as necessary.**

Key output indicators are main physical quantities of infrastructure produced with the project which can be simply measured. List in a table format the main physical indicators (as required by the Managing Authority). For examples, see table below.

Core indicators are defined in Annex 1 of Working document No. 7 of the EC Indicative Guidelines on Evaluation Methods: Reporting on core indicators for the European Regional Development Fund and the Cohesion (see [http://ec.europa.eu/regional\\_policy/sources/docoffic/2007/working/wd7\\_indicators\\_en.pdf](http://ec.europa.eu/regional_policy/sources/docoffic/2007/working/wd7_indicators_en.pdf)).

Key output indicators – Examples (reduce or expand as necessary)

Project Elements: Selective Collection			
Physical Indicators	Unit value	Initial baseline	Target indicator
Network Management Centre	Units		
Backbone network	Km		
Distribution network	Km		
Backbone nodes	Units		
Distribution nodes	Units		

**Main beneficiaries of the infrastructure (i.e. target population served, quantified where possible). Fill the text box. Extend the text box as necessary.**

**EXPECTED CONTENTS AND SPECIFIC NOTES:**

Present (e.g. in table form) the population benefiting from the project (in total and broken down by municipality and/or other administrative units, in % of total population of the region) number of institutions/businesses, and taking account of white/grey/black areas. Beneficiaries will also include third party operators that obtain wholesale access to the infrastructure thus built.

Main beneficiaries are those who benefit most from the project. It is recommended explaining what type of benefit they will enjoy and to quantify the number of the final beneficiaries as much as possible. Identification of the main beneficiaries should be consistent with demand analysis and CBA (main impacts of the investment should be analysed and monetized in CBA).

**Give details of how the infrastructure is to be managed after the project is completed (i.e., public management, concession, other form of PPP). Fill the text box. Extend the text box as necessary.**

#### Sample content

Depending of the identified PPP model, managing of the network should be given to the either public, private, special-purpose vehicles (SPVs) or in some cases to the end users.

Variations of PPP models leave this question open for initial project preparation and PPP model option. It's important to notice that according to the national legislation, there are certain frameworks that are defining how this kind of investment should be threatened and managed.

Public management of the network indicates that Authority is willing to provide a social benefit to the community, concerning about market regulations, quality of provided services, prices, etc.

Concession type of network can manage the risk and split it between both sides, in that case public partner is in better situation and risk on which he is exposed is lower. In case of SPV founded in order to manage the network, if operaiton is not run properly, the SPV can go bankrupt. In case of concession type of relationship, the public partner issues a new concession to another company. If concession is given to SPV, no real benefit is gained from having a SPV.

Other solution is to provide a single contract between public and private partner and to diversify roles in infrastructure development, further operating and managing.

#### EXPECTED CONTENTS AND SPECIFIC NOTES:

If the construction phase of the project is delivered through PPP explain main arrangements of the PPP, as requested by Application form (selection process for private partner, structure of PPP, duration of the contracts (specifying what would happen after termination), infrastructure ownership arrangements, technical provisions (performance based contract), risk allocation arrangements, etc.). Indicate if renewal of the contract is foreseen by the end of the project implementation.

The selection process of the private partner should be public and transparent and should consider the financial, technical and managerial capacities of the organisation to undertake and fulfil its part of the obligations.

#### Project objectives

**Current infrastructure endowment and impact of the project - Indicate the extent to which the region(s) is/are at present endowed with the type of infrastructure covered by this application; compare it with the level of infrastructure endowment aimed for by target year 20.....(i.e., according to the relevant strategy or national/regional plans, where applicable). Indicate the**

**foreseeable contribution of the project to the strategy/plan objectives. Specify potential bottlenecks or other problems to be resolved. Fill the text box. Extend the text box as necessary.**

#### **Sample content**

There are many correlations between development of broadband and development of the state. Some of them are:

- For every one percentage point increase in broadband penetration in a state, employment is projected to increase by 0.2 to 0.3 percent per year. Source: The Effects of Broadband Deployment on Output and Employment: A Cross-sectional Analysis of U.S. Data. Robert Crandall, William Lehr and Robert Litan, the Brookings Institution
- An increase in the broadband penetration rate by 10 percentage points raises annual growth in per-capita GDP by 0.9 to 1.5 percentage points. Source: Broadband Infrastructure and Economic Growth, 2009. Nina Czernich Oliver Falck, Tobias Kretschmer and Ludger Woessmann
- According to the U.S. Department of Commerce, between 1998 –2002 communities that gained access to broadband service experienced an employment growth increase of 1% to 1.4%, a business establishment increase of 0.5% to 1.2%, and a rental value increase of 6%

In March 2010 the European Commission prepared the strategy for smart, sustainable and inclusive growth known as the Europe 2020 Strategy, which is aimed at finding a way out of the economic crisis and preparing the EU economy for the future. One of the flagship initiatives of Europe 2020 to stimulate progress is the Digital Agenda for Europe. The objective of this initiative is to stimulate Internet access and use by all European citizens, particularly with measures to support digital literacy and accessibility of digital content.

For monitoring progress in achieving the key objectives of the Digital Agenda, a list of core indicators (Benchmarking Digital Europe 2011–2015) was adopted; they are calculated by national statistical offices in the harmonised survey on the ICT usage in households and by individuals.

#### **EXPECTED CONTENTS AND SPECIFIC NOTES**

When specifying the problems that can be resolved with project the Application should focus on the broadband-related infrastructure, not on the overall infrastructure endowment in the region/country.

The requested information to be provided in this section:

- description of the problems and/or bottlenecks existing in the project area (e.g. lack of infrastructure or access to infrastructure; high prices; low quality services, etc.). Where possible the description of the problems should be quantified, e.g. by providing information on (i) existing

infrastructure (e.g. white – grey – black areas); (ii) existing supply of the broadband services in the country (e.g. bandwidth available, price levels)

- the mapping of the project area (including the methodology and maps) should be carefully presented here to justify the need and objectives
- reference to the objectives of the European (Digital Agenda) and national/regional strategic Broadband Plans;
- reference to the contribution of the project to meet these objectives. In this context, general and specific objectives of the project should be presented, as well as its main impacts and how the project is fitting into the regional/national/international strategies.

Example of Project Objectives:

*“The project aims at tackling the lack of necessary broadband coverage by creating wholesale broadband network in those areas of the country/region which currently lack broadband infrastructure and where there are no plans for coverage in the near future. The main objectives of the project are as follows:*

- *Development of information society in the region and the reduction of digital divide (the gap between people with access to ICT and those with very limited or no access at all);*
- *Increased attractiveness/competitiveness of the region;*
- *Contribution to competition in the telecommunication sector*
- *etc.”*

**The following information should be provided, preferably in the table form:**

- (i) specific project objectives/targets;**
- (ii) current situation,**
- (iii) project impacts and**
- (iv) project output (see examples below).**

**Project objectives should be always linked to the specific objectives of the national/regional Broadband strategy and it is also recommended to Specify the contribution of the project to the Digital Agenda (quantify targets: e.g. the objective is to reach [X]% of households and [X]% of businesses with traditional and/or NGA broadband infrastructure).**

Item	Target	Current situation and constraints	Project Output	Impact

Project Impacts - **Example** (reduce or expand as necessary)

Item	Target	Current situation and constraints	Project Output	Impact
Broadband access	Ensure [x] % coverage in urban and rural areas by 2013	Currently [x] of population does not have access to broadband At present, basic broadband is available in urban areas, while in the rural area there is practically no (or only very limited) infrastructure available which results in prohibitive costs for last mile operators.	[X] km of distribution network for the purpose of wholesale broadband access	Increase broadband coverage from current [X]% to [X]% Enable access to online services and information to [X]% of population currently digitally excluded
Next Generation Broadband Access	Ensure that, by 2020 [x]% of population has access to internet speeds of above 30 Mbps and [x] % of households subscribe to internet connections above 100 Mbps	Currently [X] of population has access to NGA services	[X] km of next generation networks for the purpose of wholesale access	Increase NGA services coverage from current [X]% to [X]% Enable access to NGN that would meet the requirements of the future services

### Socio-economic objectives

Indicate the project's socio-economic objectives and targets. Fill the text box. Extend the text box as necessary.

Sample content:

**Community**

- Information as being a part of the services for the public
- Better access to information for all inhabitants
- More efficient public services
- Improving standard of living
- Closing of digital gaps regarding education, gender and income

**Education and Skills**

- Improving education and skills of children and adults

### *Employment and economy*

- Improving availability of online services
- Enhancement of competition in the telecommunications services markets
- Innovative exploitability of new digital technologies
- Strategic importance for economic and social growth
- Job opportunities for young people
- Improvement of competitiveness and innovation
- Attract inward investments
- Prevent relocation of economic activity

### *Environment*

- Improving environmental sustainability by reducing the need to travel
- Improving the management of buildings
- Improving energy savings

### *Equality and inclusion*

- Empowering the “voiceless”
- Equal opportunities within the digital knowledge community
- Connecting isolated individuals and communities
- Tackling social exclusion

### *Finance and income*

- Saving money through online shopping for goods and services

### *Healthcare*

- Reducing the costs of providing health and social care services
- Improve the outcomes of health and social care services
- Improving the speed of transmitting medical images

### *Well-Being*

- Improving people’s quality of life and social well-being
- Reducing the time spent commuting facilitating greater social interaction

#### EXPECTED CONTENTS AND SPECIFIC NOTES:

Usual socio-economic objectives for broadband projects are (examples):

- “Bridge the digital divide” by connecting areas with not sufficient broadband connectivity
- Improving availability of online services (e.g. e-commerce);
- Improving standard of living (e.g. teleworking);
- Improving education (e.g. online trainings, lifelong learning);
- Improving access to information;



- More efficient public services (e-government);
- Improving the Business environment;
- Attracting new businesses, sustaining the existing ones;
- Enhancing the growth of rural tourism, real estate, agriculture or other dominant industries in the region; and
- Enhancement of competition in the telecommunication services market.

The emphasis is on socio-economic aspects of the project, meaning which economic outcomes generated by the project may be enjoyed by the society.

Note that socio-economic objectives should be correlated with economic benefits presented in one of the following sections.

### Contribution to the achievement of the Operational Programme

**Describe how the project contributes to the achievement of the priorities of the Operational Programme (provide quantified indicators where possible). Fill the text box. Extend the text box as necessary.**

Indicator	Unit	Project contribution to achievement of OP objectives
Provision of e-health services		The ability to access information on healthcare is often listed as a major reason for obtaining access to the Internet. The availability of better health-related information has led to an improvement in the perception of healthcare in both the USA and Canada. In the Nuenen project in the Netherlands, the initial concept for the project was driven by a local housing company's wish to install e-health services, including video communications, in new-build homes for the elderly and disabled.
Increase e-health service users penetration		
Improved contact with community and family		A number of social researchers have concluded that the Internet promotes contact with friends and family, and allows people to maintain contact with people who share similar interests. Indeed in the OnsNet example, recent research demonstrated that the project had helped to promote social cohesion among members of the co-operative.
Remote working		Access to ICT enables flexible working practices, in terms of both time and location. This provides benefits for both employers and employees (e.g. parents with young children, who may be unable to work away from home, can now join the workforce). The introduction of remote working is one way in which the Rural Development Programme in Sweden may achieve its objective of promoting entrepreneurship, employment and helping to sustain Sweden's sparse rural population.
Increase numbers of remote workers		
Education and lifelong learning		While there is little evidence that e-learning is likely to replace traditional face-to-face interaction between teaching staff and students, increased ICT penetration can provide large sections of the community with the opportunity to engage in long-term, informal learning.

**EXPECTED CONTENTS AND SPECIFIC NOTES:**

Here a very specific reference to the Operational programme should be made. This includes identification of the priority axis and comparison with quantified indicators where possible.

**Describe the project contribution to OP objectives preferably in a table format. (reduce or expand as necessary)**

**OP INDICATORS – Priority Axis [X]**

Indicator	Unit	Project contribution to achievement of OP objectives
OP Objective 1: ...		
Output Indicator 1.1		
Output Indicator 1.2		
OP Objective 2: ...		
Output Indicator 2.1		
...		

**PPP Pre – Assessment**

The process refers to the assessment of the described project and will lead to the selection of the most appropriate PPP4Broadband model

**Risk mitigation**

As a general rule, in a PPP project, the risk is distributed between the partners according to their participation in the investment; however, as the public partner has none, or a small possibility, to influence the private partner’s decisions, this could pose some serious risks to the public side. Depending also on national regulations, maximum care must be taken for reducing and/or excluding the possibility for the public partner to claim operating debts.

Other emerging risks from the partnership include:

- Risk of losing property rights - limitations on how the private partner can exercise property on the network must be set;
- Risk of covering financial operating costs – has to be defined in the PPP contract;
- Risks associated with the financial capacity of the private partner to service its overall operations i.e. the private partner may bankrupt. Special care must be given to this case (depends on national regulation). The procedures on how the concession for running the

network will be re-assigned and what happens with the rights of the initial private partner (the rights of the private partner are considered immaterial assets).

## Assessment matrix

*Bottom up assessment matrix is the following:*

Risk category	Description	Consequence	Mitigation	Preferred allocation
Affordability pre-assessment	The public sector has no rule in this model	Maximum social benefit for private investors	No influence of the public to the project	
Risk allocation and management pre-assessment	Risk is borne by co-operative, management would be handed over to a telecom operator	No risk on the public's side	No risk and no management efforts	
Bankability	Funding through private investors	Minimum risk for the public	No public money required, only guaranteeing or underwriting of loans	
Business model pre-assessment	Group of end-users organising themselves, almost no involvement of the public	Maximum social benefit	No common activities between co-operatives and the public	
Value for money pre-	Maximum social benefit for private investors, quick	Little risk for the public side, maybe low	Individual projects with almost no	

assessment	implementation, but only for a small number of people.	efficiency	influence by the public, only recommended for small local projects	
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### Pre-assessment - feasibility

**Provide a summary of the main conclusions of the feasibility studies. Fill the text box. Extend the text box as necessary.**

**Sample content:**

The feasibility study results should provide complete information on:

- benefits that the project can bring to the community;
- the project alternatives examined;
- the manner in which the implementation of the project meets the requirements and policies of the public partner;
- the project benefits of a financial closure and if the project cost can not be covered by public income, which is the content and form of the public partner's participation to the project, compliance with the law.

Aspects:

It is made an analysis on existing situation with indication of the geographical particularities and the relevant socio-economic features of selected areas.

It examines the demand on types of people: legal (economic agents, community anchor institutions) and individuals. For individuals it is collected data obtained by survey: age, education, occupation, monthly financial resources available for such services, the interest in becoming users.

It is identified solutions to network build taking into account the accessibility to existing facilities, the location of the local government offices, legal status of the land, proximity to other broadband networks and geographical configuration. It will be taken into account at least the following elements: optimization of the distance between the white area and the insertion point to backbone; number of the distribution points associated with the grouped white areas; correlation of the network design with the population density; relief features; identification and use of the existing facilities at the territorial administrative units level (aerial network, sewer, buildings etc.).

Description of significant technical alternatives, selecting the appropriate technology for each case (optical fiber, WiMAX, satellite, xDSL, 3G/4G, LTE, etc..) and evaluation of the investment costs. It is considered the possibility of combining several technological solutions in same the area.

Identification of basic equipments, estimation of equipments costs and estimation of costing of operations.

Identification of possible locations for local access point and their evaluation considering local policies, availability of locations etc..

Identification of the necessary permits and licenses and estimation of the required time and costs to obtain them.

Techno-economic scenario for a private investment in the white areas based on elements such as: the potential of targeted customers, forecasts on future development opportunities, types of services for that area.

The whole process of development and implementation must respect the principles of technological neutrality for both the distribution network (backhaul) and the connection to the local loops network. At the distribution point in a white area, the local loop allows connecting any available technology on the market (corresponding ports will have to be all the technologies available).

The available capacity at distribution points in the white areas, will deal on the principle first

EXPECTED CONTENTS AND SPECIFIC NOTES:

The purpose of this section is to assure the funding agency (EC, or the National authorities of the non-EU agencies) that the best possible solution to the problem was sought and found. When preparing documentation for the so called “decision-to-proceed” milestone (or a funding request to bank or funding agency - EU) we usually deal with one option only. The results of the Analysis should provide evidence that the best option of the project was chosen, and that it is (i) desirable from a socio-economic point of view; (ii) consistent with the operational programme and other Community/ National policies; (iii) in need for co-financing. Based on the information presented and their own experience, the evaluators have to be able to form an opinion whether the best option was chosen or not.

It is recommended to list and summarize all pre-feasibility and feasibility studies that were produced in the process of project initiation and development. This includes not only feasibility studies, but also some previous studies and surveys from respectable and reliable sources.

Please refer to the results of the feasibility studies when presenting the results regarding the analysis of the alternative solutions briefly indicating the main conclusions with regards to the following aspects:

- System analysis: availability of infrastructure/services vs. needs/demand of different customers groups;
- Technological issues, i.e. description of technology chosen, specifically information on technology neutrality, open access, wholesale provisions;
- Organisational and management structure requirements for the project.

**Give precise references if ERDF, Cohesion Fund, ISPA or other Community assistance is/was involved in financing of the feasibility studies. Fill the text box. Extend the text box as necessary.**

**Demand analysis** - Only if applicable – mandatory only in cases of Availability PPP models

**Provide a summary of the demand analysis, including the predicted utilisation rate on completion and the demand growth rate. Fill the text box. Extend the text box as necessary.**

The Internet, and more specifically broadband Internet, has become an integral part of the broader economy. Since the digital or information economy incorporates computer processes, telephony, information storage and use, hardware, and software, however, it is challenging to separate out the Internet's contribution to economic growth and well-being.

Broadband access is viewed as necessary to fully utilize the Internet's potential. As the Internet economy has matured, more applications now require higher data transmission rates, even in the case of simple shopping websites. In a recessionary economy a number of Internet activities - including job searches and home businesses - may become more critical especially for rural households and businesses. Areas with low population size, locations that have experienced persistent population loss and an aging population, or places where population is widely dispersed over demanding terrain generally have difficulty attracting broadband service providers. These characteristics can make the fixed cost of providing broadband access too high, or limit potential demand, thus depressing the profitability of providing service.

Rural communities are invested in the digital economy, though equal access across the rural-urban landscape is questionable. Rural and farm households are almost as likely as urban households to use the Internet, but are less likely to use broadband. Rural businesses are less likely than urban businesses to use the Internet. Broadband access is less prevalent in rural areas than in more densely populated areas. Broadband provision follows a geographical pattern strongly tied to population size and the urban-rural hierarchy. Lack of broadband is most strongly associated with low population size in the area. Rural Internet users have less in-home broadband access, and this is likely due to its higher cost and limited availability in rural settings.

It is well known that more activities are shifting to the Internet. Some of these activities have great potential value for the rural economy. Education programs and offerings - primary, secondary, higher education, and continuing education - have become richer on the Internet. Telework is becoming a more practical option for workers and businesses. Some medical services may lend themselves readily to the Internet environment, with potential cost savings for rural residents and medical clinics that offer in-situ services not otherwise readily available in rural settings. Rural businesses are adopting more e-commerce and Internet practices, enhancing economic vitality and expanding market reach. Individuals are using the Internet to get involved with their communities.

An interesting study "The socio-economic impact of bandwidth (SMART No. 2010/0033)" was prepared for the European Commission DG Communications Networks, Content & Technology by Analysys Mason Limited and Tech4i2 Limited (<http://ec.europa.eu/digital-agenda/en/news/study-socio-economic-impact-bandwidth-smart-20100033>)

The results of this study showed that large parts of European countries can expect to have fixed NGA networks deployed on a commercial basis by private operators. In particular, existing cable networks can provide widespread coverage within some countries, especially due to the cost-effective way that these networks can be upgraded to DOCSIS3.0. FTTP is likely to be deployed to the least extent (due to the high costs of installing new duct and large amounts of fibre) and shows a wide range of viable coverage levels. However, FTTC is very often viable to a much greater extent, and FTTC networks will help to provide effective infrastructure competition to the cable networks. In Central & Eastern Europe, commercially driven roll-outs will be able to provide FTTP or FTTC to 31% of households by 2020. Also, in this study the following estimation is stated: the weighted average coverage of 30Mbit/s broadband in Central & Eastern Europe in 2020 from commercially-viable terrestrial deployments will be 91% while the equivalent figures for 100Mbit/s broadband will be 38%. These results indicate that terrestrial deployments by the commercial sector can be expected to deliver the bulk of this coverage but some further policy intervention is likely to be required to achieve 100% coverage using terrestrial technologies (similarly, some public funding may be required to make the construction and launch of a 30Mbit/s broadband satellite covering Europe viable). By 2020, the weighted average take-up of services on 100Mbit/s capable technologies in Central & Eastern Europe will be 22%. This is a long way short of the Digital Agenda for Europe (DAE) target of 50% of households subscribing to 100Mbit/s+ services by 2020, indicating that further policy interventions and further funding are likely to be required in order to achieve the target.

Finally, three scenarios are presented for the calculation of the level of funding that may be required to achieve the 100Mbit/s take-up target: (a) “Do nothing (base case)”: represents no policy intervention from the Commission, (b) “Modest intervention”: 5% reduction in relevant deployment costs and (c) “Major intervention”: 10% reduction in relevant deployment costs. In the modest intervention scenario, the combination of the public funding and private sector investment leveraged by the public funding lifts the 100Mbit/s coverage to 61% (compared to 50% in the do nothing scenario) and take-up to 34% (compared to 26% in the do nothing scenario). In the additional activities scenario, a further EUR50 billion of public investment leveraging a further EUR107 billion of private investment and increases coverage to 82% but still only results in 47% take up. This is because the public investment in infrastructure is assumed to be made only until overall take-up reaches 50%. In some countries 50% take-up is achieved (and therefore no further investment in infrastructure is made) but in other countries, take-up within covered areas is so low that even with 100% fixed NGA coverage, overall take-up on 100Mbit/s networks does not reach 50%. One way to increase take-up further would be to subsidize the price to consumers of 100Mbit/s service. An estimation of a 10% subsidy in the years between 2017 and 2020 on the cost of services on 100Mbit/s capable networks would raise the overall take-up by 3%, thus meeting the DAE target. The cost of providing such a subsidy would be EUR12 billion.

#### EXPECTED CONTENTS AND SPECIFIC NOTES:

Provide a reference to the demand model in the Feasibility Study. Include a summary of the methodology applied to assess the future demand. Outline the made assumptions made on the baseline values and the expected trends.

The demand analysis should provide trends of the past demand with projections of future developments (forecast). This is a pre-requisite for the correct design of the project components, the subsequent financial and economic assessments, and a main determinant of their quality.

The presentation should be concise (not the whole chapter of the FS is needed, but only the main assumptions and results of the demand analysis).

The demand analysis of the present situation should be based on the inventory of the market (e.g. black, grey and white areas). Forecast should refer to national or international benchmarks of take up in areas where there is Internet/ Broadband access and the services to be offered by the beneficiary/operator.

The presentation of the existing market situation should provide an overview of the demand and supply side issues, including summary of the type, scope and quality of services provided with existing infrastructure, accompanied with the pricing policy in place and the demand from final users, elements that justify the project inception.

The existing market situation can be described by providing information, and/or evidence of the following:

- Limited infrastructure that could be used for delivery of broadband services;
- Low-level take-up of broadband services;
- Limitations in the current quality of services provided or services not available in the region concerned;
- Lack of true competition;
- Limited access, and in some areas no access, to carrier's carrier data transmission services and to the passive infrastructure;
- High prices in the market / low affordability of the final customers;
- Limited effectiveness of market regulations and their restricted impact on the pace of competition development and, thus, on the scope and quality of services;
- No prospects in the foreseeable future to attract private investments in the area of broadband infrastructure;
- Market comparison of prices; and
- Operators existing in the market and services offered.

At the same time please indicate in the demand forecast:

- General demand model as well as a summary of the methodology applied;
- Expected growth rate during the project horizon including socio-economic context: structure and distribution of population – urban/rural, households/commercial users, special geographical/ topographical features in the region, etc;
- Assumptions on the future types of services and analysis of required bandwidth;

- Anticipated level of tariffs and the role of National regulator in price control;
- Anticipated structure of revenues generated by the project; and
- Anticipated market share.

### Options considered

**Outline the alternative options considered in the feasibility studies. Fill the text box. Extend the text box as necessary.**

**Sample content:**

Alternative options considered can be revealed by changing the technical, financial, economic, social, institutional and environmental aspects of public-private project used as input variables.

- Studying the employment situation of rural local government of designers, builders and operators of Bottom Up broadband systems type.
- Design, construction and / or operation by a consortium created specifically for it by rural

### EXPECTED CONTENTS AND SPECIFIC NOTES:

The section aims at identifying investment alternatives along with their key features. The rationale behind it is to prove why the selected option is the best available from the identified alternatives.

The following approach and description is recommended for this section: (1) list the options considered in the FS at the strategic/system level, technological and operational level; (2) present a comparison table against the criteria used in assessment of the alternative indicating the preferred option.

As provided in the Feasibility study, it is strongly recommended to use the following steps to demonstrate how the options have been identified, analysed and classified/ranked:

#### 1. Identification of alternatives :

The alternatives should be realistic and identified based on compliance with fulfilment of the project objectives and national and EU-targets for the intervention (EU 2020 targets, eliminating digital divide etc.). Identification of alternatives will normally start at the level of National / Regional Broadband strategy, which should provide general criteria to be followed at the project level.

If possible, aim at presenting three to four different alternatives (counting the Business as usual (BAU) as a scenario).

Note that the alternative analysis should be carried out on incremental basis, i.e. by assessing the difference between (i) scenario with 'a project'; and (ii) scenario without the project (do nothing or, in some cases, do minimum).

#### 2. Feasibility Analysis:

The Feasibility Analysis aims at assessing the identified alternatives. It is strongly recommended to do the same in a table format, presenting the advantages and disadvantages of each alternative, displaying the potential economic, regulatory, technology and management aspects of each solution.

An analysis and ranking of the options can be made by using the following indicators (indicative list only):

a) Strategic dimension of the alternatives covering:

- Compliance and fulfilment of national strategies;
- Compliance and fulfilment of EU-objectives;
- Cost-effectiveness of each solution; and
- Socio-economic impact (who would benefit from the project).

b) Technological dimension of the alternatives covering:

- Adequacy of the technological aspects of the options, in order to maximize the coverage, up-take and sustainability (future-proof) of the network solution

c) Organizational dimensions of the alternatives covering:

- advantages and disadvantages of alternative business models for the implementation, indicating which one that is best suited for the Beneficiary.

d) Environmental dimensions of the alternatives covering:

- environmental quality standards, the potential effect on Natura 2000 sites, etc. (this section must be compatible with section F).

e) Financial and Economic dimensions of the alternatives covering:

- Comparison based on the least cost analysis or economic cost-benefit analysis and a ranking to show which is the one with the lowest cost, or the highest economic net present value. All assumptions made on costs/benefits in the analysis of the alternatives should be identical with the ones used in the subsequent (full) CBA of the project (for the selected option). An option analysis not including a quantitative analysis of costs (and possibly economic benefits) may not be accepted.

3. Option selection:

Once the qualitative and quantitative analysis presented in the preceding sections has been made, it is possible to rank the different alternatives selecting the most suitable and feasible option. The public entity needs to provide a justification of its choice.

### PPP4Broadband model affordability

There are many business models that can be applied to broadband projects, Europe has been particularly creative in this regard. Basically, they are divided in two groups, one that does not include state aid, and the other that does.

#### No aid

Under several circumstances a given measure will not be considered to constitute State aid. Regarding broadband cases, the main reasons adduced by Member States or the Commission to refrain from examining a public measure under the light of State aid rules, are the qualification of the broadband project:

1. as public or general infrastructure,
2. as a compensation for the provision of Services of General Economic Interest,
3. as a behaviour consistent with the Market Economy Investments Principle by the State
4. as a self-provision measures by the Public Administration and
5. as a de minimis aid.

However, these cases are in general quite exceptional and subject to a rather restrictive interpretation by the Commission.

### *Public infrastructure*

Public infrastructures are characterized by being needed to provide a service that is falling within the responsibility of the State towards the general public and is limited to meeting the requirements of that service. Moreover it should be a facility that it is unlikely to be provided by the market because not economically viable. It should be thus analyzed from the outset if the type of infrastructure is actually deployed by private parties, which would automatically exclude the qualification as public infrastructure.

So far, the Commission does not exclude the possibility that a broadband project might fall into the definition of public infrastructure, yet almost no such case has ever been the object of a decision. Indeed, the possibility of considering a broadband project as a public infrastructure case is not explicitly mentioned in the Broadband Guidelines and it does not seem to be an issue with regards to its revision, which should be completed by September 2012. However, Paragraphs 60 and 61 of the Guidelines, state that “civil works... (which are not) ‘industry or sector specific’ but (are) open to all potential users, and not just electronic communications operators...fall outside the scope of article (107(1))”. According to the personal opinion of some members of the Commission’s DG COMP “the infrastructure argument appears ...tenable only if limited to basic civil works and passive elements such as ducts and dark fibre in unserved areas”. The Guidelines are however not exhaustive when analyzing the conditions for the existence of public or general infrastructures. It is therefore useful to refer to some of the cases in which this question has arisen.

Moreover – and the Guidelines don’t mention this important fact – it should be a facility that is unlikely to be provided by the market itself, and the way it is operated should not selectively favour any specific undertaking. This was not the case of the two aforementioned projects.

By means of example, the Commission made references to infrastructures in the transport sector which are open to all potential users on equal and non-discriminatory terms – yet without defining the concept of “all potential users” – and which are not provided (constructed and/or managed) by the market on purely commercial terms. The Commission noted in the first case that fibre networks such as the MANs are actually deployed by market operators. The fact that the conditions of deployment which the Irish Government sought were not met by the existing fibre networks was in this sense irrelevant in the Commission’s view. The same argument was used to refuse the existence

of a public infrastructure in the Appingedam case. Indeed, this project as we will see later, did not even fulfil the conditions for exemption under article 107 (3) and was therefore not approved by the Commission. This was not a surprising conclusion, considering that in its opening decision the Commission already stated that it was difficult to envisage applications or services for citizens and businesses which could not be deployed using broadband services delivered over the existing networks. The project thus duplicated market initiatives. The presence of a fixed line operator (KPN) and of a major cable operator (Essent) both serving the whole of Appingedam was therefore proof that the provision of a local access network could not be considered as a task of a public authority.

As far as we are aware, there has been only one case in which the Commission has – partially – accepted the argument of the building up of a public infrastructure to exempt a measure from being caught by Article 107 (1). The case concerned a notified modification of an approved scheme whose primary objective was to support necessary investments to ensure broadband services in rural and remote areas of Saxony where there were no or insufficient broadband services available and where there were no plans for coverage in the near future (therefore "white areas").

Whereas general civil works carried out by the municipality and the concomitant permission granted for network operators to deploy at their own costs ducts and passive infrastructure are covered by the definition of general infrastructure and do therefore not involve State aid, the assessment and conclusion reached by the Commission is different when it is the municipality itself who places the ducts and the passive network elements:

As for the other constellation, State aid can arise for the use of the duct infrastructure, i.e. when the public authorities make these facilities available to undertakings (electronic communication operators) without adequate remuneration for the costs of the construction and the use of the ducts. As the scheme does not require that a cost adequate remuneration should be paid, the provider will have an advantage by being able to use a ducts infrastructure, which normally represents a significant part of his investment costs. Although the competitive tender tends to reduce the amount of financial support required, it will still offer operators the possibility to offer services prima facie at lower prices than if they had to bear the costs themselves.

The Commission considers the use of the ducts also to be selective as this possibility is only granted to certain undertakings falling under the scheme and selected by the tender procedure. In that regard, the Commission draws again attention to paragraph of the Broadband Guidelines which regards civil works carried out by the State not to constitute State aid as long if it is not "industry or sector specific".

#### ***Compensation for the provision of Services of General Economic Interest (SGEI)***

Use of public resources might not constitute State aid also in relation to the funding of a SGEI.<sup>22</sup> The ECJ has indicated that compensation for costs that result from public service obligations fall not within the scope of article 107 (1) of the Treaty, provided the Altmark criteria are fulfilled. Contrary to the public infrastructure argument, the compensation for SGEI is more frequently recognised by the Commission, although it remains exceptional and subject to very stringent conditions.

According to the case-law of the Court, provided that four main conditions (commonly referred to as the **Altmark criteria**) are met, State funding for the provision of an SGEI may fall outside the scope of Article 107 (1) of the Treaty on the Functioning of the European Union.

The four conditions are:

1. The beneficiary of a State funding mechanism for an SGEI must be formally entrusted with the provision and discharge of an SGEI, the obligations of which must be clearly defined.
2. The parameters for calculating the compensation must be established beforehand in an objective and transparent manner, to avoid it conferring an economic advantage which may favour the recipient undertaking over competing undertakings
3. The compensation cannot exceed what is necessary to cover all or part of the costs incurred in the discharge of the SGEI, taking into account the relevant receipts and a reasonable profit for discharging those obligations, and
4. where the beneficiary is not chosen pursuant to a public procurement procedure, the level of compensation granted must be determined on the basis of an analysis of the costs which a typical undertaking, well run, would have incurred in discharging those obligations, taking into account the relevant receipts and a reasonable profit.

#### *Entrustment with clearly defined obligations of public service*

The act of entrustment has to take “the form of one or more official acts having binding legal force under national law. The specific form of the act (or acts) may be determined by each Member State, depending among other things on its political and/or administrative organisation”.

Member States have a wide margin of discretion in the definition of services that could be classified as being services of general economic interest, provided sectoral Union rules governing the matter do not exist.

In the electronic communications sector, Community legislation harmonises the principles applicable to the universal service obligation, which concerns the supply of a minimum set of basic services to all end-users at affordable prices. The scope of universal service includes a narrowband connection capable of supporting voice and data communications at a speed sufficient to access the Internet; typically at or equal to 56 kbit/s. Member states may however decide to make additional services publicly available in their territory, in addition to those included in the scope of universal service, according to the Universal Service Directive. Thus, the provision of broadband access might be considered as a SGEI without altering the scope of the concept of universal service.

Yet in spite of the wide margin of discretion which Member states dispose of, the definition of such services or tasks can be questioned by the Commission in the event of a manifest error. The determination of the nature and scope of an SGEI mission falls within the competence and

discretionary powers of Member States, but such competence is neither unlimited nor can it be exercised arbitrarily. In particular, for an activity to be considered as an SGEI, it should exhibit special characteristics as per Point 21 of the Communication from the Commission — Community Guidelines for the application of State aid rules in relation to rapid deployment of broadband networks.

With regard to the definition of the scope of a mission of a service of general economic interest for the purposes of ensuring widespread deployment of a broadband infrastructure, paragraph 25 of the Broadband Guidelines requires Member States to describe the reasons why they consider that the service in question, because of its specific nature, deserves to be characterised as a service of general economic interest and to be distinguished from other economic activities.

Estonia considers that the availability of a high speed broadband infrastructure is a key factor for the local communities in attracting businesses, distance working, providing health care services and improving education and public services. The authorities expect that the EstWin Project will increase social cohesion and contribute to economic growth.

And indeed, a general access to high speed broadband services answers today a general and basic need and represents a specific general interest to be distinguished from other economic activities.

Because of high fixed costs of investment, unit costs increase strongly as population densities drop. As a result, broadband networks tend to profitably cover only part of the population...

Typically, these underserved regions are rural areas with a low population density so that commercial providers have no economic incentives to invest in electronic communications networks to provide adequate broadband services. This leads to a "digital divide" between the areas which have access to adequate broadband services and those that have not.

The importance of full high speed internet coverage of the territories of Member States and the need to encourage joint initiatives of stakeholders has been explicitly identified by the European Council of March 2009.

As a consequence it is in the declared general economic interest that a Member State employs public funds in order to enable that areas currently and in the near future not served by high speed internet will get connected soon. The Estonian plan to target public funding to the rollout of high speed internet in rural areas does fit into the flagship initiative.

In this last decision, EstWin, the Commission makes a general and broad statement regarding the compliance with the existence of a specific general interest condition that distinguishes the project from other economic activities, by saying that "general access to high speed broadband services answers today a general and basic need and represents a specific general interest to be distinguished from other economic activities". At the same time, however, it mentions some specific objectives which go beyond mere economic development, such as increase of social cohesion or improving education services.

Likewise, in the Pyrénées-Atlantiques case, the Commission acknowledged that broadband services can be considered to carry a general interest that goes beyond that of generic economic activities. Broadband services are becoming a widespread support not only for the development of business initiatives, but also for responding to numerous citizens' needs and for the supply of government services. The possibility to offer, thanks to broadband, e-Health, e-Government, e-Education and tele-working would render this type of initiatives more relevant to the general interest than projects for pure economic development, which would generally be assessed under the existing State aid rules, for example on regional aid. Naturally, SGEI projects must be related to the provision of a service to the general public and not be exclusively targeted at businesses. At the end of the day, the most relevant issue with regard to the existence of a specific general interest, will be to determine whether broadband infrastructure has been actually deployed already or not by private operators and if the benefits reach not only business but also individuals on the same level (universal provision).

In this respect, the Commission will consider that in areas where private investors have already invested in a broadband network infrastructure (or are in the process of expanding further their network infrastructure) and are already providing competitive broadband services with an adequate broadband coverage, setting up a parallel competitive and publicly-funded broadband infrastructure should not be considered as an SGEI within the meaning of article 106 of the Treaty. The networks to be taken into consideration for assessing the need for an SGEI should be always of comparable architecture, namely either basic broadband or NGA networks.

Where, however, it can be demonstrated that private investors may not be in a position to provide in the near future (i.e. within 3 years no significant progress in terms of coverage will be made, and/or completion of the planned investment foreseen within a reasonable time frame there after) adequate broadband coverage to all citizens or users, leaving thus a significant part of the population unconnected, a public service compensation may be granted to an undertaking entrusted with the operation of an SGEI provided that the conditions discussed below are met.

In principle, public service compensation may be granted to an undertaking entrusted with the construction and operation of a broadband network. According to paragraph 24 of the Broadband Guidelines this may be the case where it can be demonstrated that private investors may not be in a position to provide in the near future (a period of three years) adequate broadband coverage to all citizens or users leaving thus a significant part of the population unconnected. Consequently, a publicly funded network set up in white areas for all potential users, business or private, may be financed by way of public service compensation. However, a number of conditions have to be fulfilled, in particular those set out in paragraphs 25 to 29 of these guidelines.

Estonia described the reasons why the roll out of a NGA network in rural areas not served by private investment needs to be financed by the State in the general economic interest.

With a mapping exercise based on a consultation of stakeholders and the national regulatory authority it has established which areas will not be served by high speed internet infrastructure on



market terms within the next three years. It has also set out why it considers important to avoid a digital divide between urban and non served rural areas.

It is in the declared general economic interest that a Member State employs public funds in order to enable that areas currently and in the near future not served by high speed internet will get connected soon...

Estonia has furthermore demonstrated the necessity of its intervention. In none of the identified white NGA areas, even if there should already be one or several traditional network providers present, operators do have plans to invest in NGA networks during the coming three years. In addition, the technology in use is not capable to be upgraded to a performance level which Estonia aims at for the future and which can only be offered by optical fibre cables.

The analysis of the condition of unlikelihood of broadband being deployed by private operators in the near future was examined in detail by the Commission in a case concerning the deployment of a broadband network in the Hauts-de-Seine department:

Besides proving that the service in question, because of its specific nature, deserves to be characterised as an SGEI and to be distinguished from other economic activities Member States willing to ensure widespread deployment of broadband infrastructure should further ensure, we recall, that the SGEI mission satisfies certain minimum criteria common to every SGEI mission, namely:

1. The beneficiary of a State funding mechanism for an SGEI must be formally entrusted with the provision and discharge of an SGEI, the obligations of which must be clearly defined.
2. The parameters for calculating the compensation must be established beforehand in an objective and transparent manner, to avoid it conferring an economic advantage which may favour the recipient undertaking over competing undertakings
3. The compensation cannot exceed what is necessary to cover all or part of the costs incurred in the discharge of the SGEI, taking into account the relevant receipts and a reasonable profit for discharging those obligations, and
4. where the beneficiary is not chosen pursuant to a public procurement procedure, the level of compensation granted must be determined on the basis of an analysis of the costs which a typical undertaking, well run, would have incurred in discharging those obligations, taking into account the relevant receipts and a reasonable profit.

The presence of an act of the public authority entrusting the operators in question with an SGEI mission

The act of entrustment with an SGEI mission has to take the form “of one or more official acts having binding legal force under national law. The specific form of the act (or acts) may be determined by



each Member State, depending among other things on its political and/or administrative organisation”.

Public support is not considered aid if it is possible to establish a clear correspondence between the extra costs of public service obligations and their compensation. This requires a precise identification of the services demanded. In general, the attribution of a public service mandate through an open procedure implies a detailed specification of the required services and fulfils this criterion. Sometimes, however, there is no legal Act in the particular country declaring broadband services as SGEI (for instance Spain) or the particular dispositions putting in place the measure do not refer to it being a public service.

Furthermore, according to paragraph 25 of the Broadband Guidelines member States should ensure that the mission of the service of general economic interest satisfies certain minimum criteria ... specified in paragraph 26 of the Broadband Guidelines: the presence of an act of the public authority entrusting the operators with the mission, and the universal and compulsory nature of that mission. The broadband infrastructure to be deployed should provide universal connectivity to all users in a given area, residential and business users alike. Moreover, the provider of the network to be deployed must not be able to refuse access to the infrastructure on a discretionary and/or discriminatory basis.

In assessing whether the definition of an SGEI for broadband deployment does not give rise to a manifest error of appreciation, Member States should ensure that the broadband infrastructure to be deployed should provide universal connectivity to all users in a given area, residential and business users alike. This is considered by the Commission as one of the elements which determines the special characteristics as compared with ordinary economic activities (see *supra*). Yet, it usually takes into account the condition of universal and compulsory nature of the mission in its decisions in a separate section, which in practice constitutes a crucial element for determining the existence or not of an SGEI for broadband deployment.

In the case of Pyrénées-Atlantiques, the direct objective of the measure was to enable access to broadband services to the general public, although through a wholesale infrastructure. In that case the concessionaire of the service was under the obligation to provide wholesale access to broadband services connecting all residential and business users who wish to be connected. In the notified measure, although residential users may benefit from the measure, the wholesale services provided by the MSE are high-bandwidth services, dark fibre or sub-ducts which are targeted not at the general public and citizens, but are offered to operators of electronic communications services to provide, first of all, high speed services to businesses. This is confirmed by the fact that the only users for which a direct connection via the MANs will be economically viable are large businesses located close to the MANs. In order to connect “mass market” end users (SMEs and residential users) operators still have to bridge the last mile using local loops of Eircom or alternative local access technologies like wireless services.



As the Commission does not concur with the analysis of the Irish authorities on the character of the measure as a Service of General Economic Interest, it does not deem necessary to assess the measure in light of the other criteria laid down in the Altmark jurisprudence.

Unlike in cases in which the Commission decided that public financial support constitutes compensation for a SGEI – cf. decision on Pyrénées-Atlantiques – neither the foundation nor the operator have a clear SGEI mandate to enable broadband access to the general public, citizens and businesses, in rural and remote areas where no other operator is providing ubiquitous and affordable broadband access.

In the case of Pyrénées-Atlantiques, the direct objective of the measure was to enable access to broadband services through a wholesale network to the general public in a region with limited broadband coverage. These conditions do not apply in Appingedam where broadband services are already provided over two networks.

As the Commission finds that the measure does not represent a Service of General Economic Interest, it does not deem necessary to assess the measure in light of the other criteria laid down in the Altmark jurisprudence.

The compulsory nature of the SGEI mission implies that the provider of the network to be deployed will not be able to refuse access to the infrastructure on a discretionary and/or discriminatory basis because for instance, it may not be commercially profitable to provide access to a given area. Given the state of competition that has been achieved since the liberalisation of the electronic communications sector in the EU, and in particular on the retail broadband market, a publicly funded network set up within the context of an SGEI should be available for all interested operators.

It follows also that an SGEI for broadband deployment cannot entail the award of an exclusive or special right to the provider of the SGEI. The funding of a network belonging to one operator that may restrict access to competitors, would risk foreclosing the market from new entrants in the medium term. In the contrary, public intervention should not create monopoly positions but instead ensure open and non-discriminatory access to the financed network. The open access requirement should concern the basic element of the infrastructure – e.g. access to dark fibre in case of an optical fibre infrastructure. Accordingly, the recognition of an SGEI mission for broadband deployment should be based on the provision of a passive, neutral and open access infrastructure, without including retail communication services. This limitation is justified by the fact that the market might not be able to undertake the high fixed-cost investment in the infrastructure, but once an open infrastructure is available, market operators would normally not need additional funding for the supply of the downstream services.

The publicly funded network will be available for all interested operators which will have open, nondiscriminatory access to the passive infrastructure which would provide access seekers with all possible forms of network access and allow effective competition at the retail level, ensuring the provision of competitive and affordable services to end-users.



The entrustment and the aid would only cover the deployment of a network and the provision of the related wholesale access services, without including retail communication services.

Wholesale prices on the subsidized network will be monitored by the National Regulatory Authority with the objective to have retail access prices similar to non-subsidised areas. Price benchmarking is an important safeguard to ensure that the aid granted will serve to replicate market conditions like those prevailing in other competitive broadband markets.

A network should be technologically neutral and thus enable access seekers to use any of the available technologies to provide services to end users. Although such a requirement may be of limited application in relation to the deployment of an ADSL network infrastructure, this may not be the case in relation to a NGA, fibre-based network where operators may use different fibre technologies to provide services to end-users (i.e. point-to point or G-PON).

Where the provider of the SGEI mission is also a vertically integrated broadband operator, adequate safeguards should be put in place to avoid any conflict of interest, undue discrimination, cross- subsidization and any other hidden indirect advantages. Such safeguards may include, in particular, an obligation of accounting separation, and may also include the setting up of a structurally and legally separate entity from the vertically integrated operator. Such entity should have sole responsibility for complying with and delivering the SGEI mission assigned to it.

**The parameters for calculating the compensation should be established in an objective and transparent manner beforehand.**

If the mechanism for compensation leaves some margin of discretion or the possibility to grant ex-post additional funding, the risk of overcompensation could not be excluded. The criterion is normally satisfied when the service is attributed through an open tendering procedure, since the overall amount of aid, or the parameters for compensation, would be determined before the start of the contract. However, if a call for tender occurs by means of a negotiated procedure this is a sufficient reason for the Commission to conclude that compliance with Altmark's second condition is not reached, as the parameters for calculating the compensation have not been determined in advance.

In complying with its universal coverage mission, an SGEI provider may need to deploy a network infrastructure not only in areas which are unprofitable, but also in profitable areas, i.e. areas in which other operators may have already deployed their own network infrastructure or may plan to do so in the near future. However, given the specificities of the broadband sector, in this case any compensation granted should only cover the costs of rolling out an infrastructure to the non-profitable areas.

#### *No overcompensation*

Whatever the mechanism for the choice of the operator and the determination of compensation, the latter must not exceed what is necessary to cover all or part of the costs incurred in discharging the



public service obligations, taking into account the relevant receipts and a reasonable profit for discharging those obligations’.

Indeed, even if the attribution takes place through an open procedure on the basis of the best available offer on the market there could be circumstances in which this would not be enough to exclude overcompensation. This might be the case if the number of potential competitors is limited – notably because of the atypical character or the complexity of the service – or if an operator has privileged access to an infrastructure necessary to provide the service. To avoid this problem, in the case of Pyrénées-Atlantiques, the authorities required the selected operator to set up a legally independent company whose accounts would be regularly audited. A reverse payment clause in case of revenues exceeding a certain threshold was also foreseen.

Where an SGEI for the deployment of a broadband network is not based on the deployment of a publicly-owned infrastructure adequate review and claw back mechanisms should be put in place in order to avoid that the SGEI provider obtains an undue advantage by retaining ownership of the network that was financed with public funds after the end of the SGEI concession.

Finally, to fulfil the Altmark criteria, in principle the service compensation should be granted through an open, transparent, and non-discriminatory tender requiring all candidate operators to define in a transparent manner the profitable and non-profitable areas, estimate the expected revenues and request the corresponding amount of compensation that they consider strictly necessary.

Where the four criteria set out in Altmark are not met, and if the general criteria for the applicability of Article 107 (1) of the Treaty are fulfilled, public service compensation for the deployment of a broadband infrastructure will constitute State aid unless another of the exceptions treated in this chapter is applicable.

### **Market Economy Investor Principle**

To be able to assess whether financial transactions and investments by a government constitute or not state aid conferring an advantage to certain undertakings, the Commission has developed the Market Economy Investor Principle (MEIP).

When Public Authorities intervene on the economy acting as a private operator under market economy conditions, they do not grant any “economic advantage”, therefore State aid does not exist. According to this principle, a transaction does not involve State aid if it takes place at the same time and under the same terms and conditions that would be acceptable to a private investor operating under normal market economy conditions. The typical case where the private investor principle is applied is when a public authority makes an investment in an undertaking.

It is necessary in this case to determine whether, in similar circumstances, a private investor of a dimension comparable to that of the bodies managing the public sector could have been prevailed upon to make capital contributions of the same size having regard in particular to the information available and foreseeable developments at the date of those contributions.

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Concerning public investments in broadband networks, the MEIP provides a way for a measure to escape being considered State aid which presents very different features when compared to those which constitute public infrastructures and SGEI. Indeed, it can be considered even as a completely opposed category: not only is it not based on a market failure, but it even demands that the project provides enough prospects of profitability to consider that a private operator would be willing to make the same investment and under the same conditions. Broadband projects in “black areas” will therefore be the standard measure covered by this principle, whilst those same investments can be considered to be “per se” excluded from falling into the definition of public infrastructures or SGEI. For instance, in the Appingedam case mentioned supra, the fact that the Dutch authorities based its defence of the measure on the provision of a SGEI, automatically discarded any possibility to resort to the MEIP.

In order to assess the compliance with the MEIP, the Commission based its decision on the project’s rate of return in spite of the lack of reference to a well-defined market benchmark, and on other elements such as the pricing policy. In view of these elements, it decided that “it was difficult to conclude that the project (was) carried out in accordance with the MEIP”.

Even though the MEIP is available for justifying funding traditional and NGA broadband networks, the Commission, again, is very strict in its application. The Broadband Guidelines deal with this issue (Paras. 17 to 19 and 59) but only briefly and not exhaustively.

The analysis whether or not the measure meets the MEIP must be carried out in the moment of the initial investment (verification *ex ante*, not *ex post*). Pursuant to that principle, a transaction does not involve State aid if it takes place at the same time and under the same terms and conditions that would be acceptable to a private investor operating under normal market conditions. In case of a capital contribution from public funds, according to the statement made by the Commission in the Citynet Amsterdam Project, such a measure will be regarded as satisfying the MEIP test the market economy investor test can be split in five different elements:

- 1) First, it has to be identified whether the investors are market investors and whether the investments by the private investors have real economic significance. Such significance should be assessed in absolute terms (a significant portion of the total investment) and in relative terms (in relation to the financial strength of the private investor concerned).
- 2) Second, it has to be assessed whether the investment by all parties concerned take place at the same time (“concomitance test”).
- 3) Third, it has to be identified whether the terms and conditions of the investment are identical for all shareholders.
- 4) Fourth, in cases where the State, other investors or the beneficiary have other relationships outside this investment (for example through a side-letter, providing for a guarantee by the State), there may exist grounds to doubt whether such equivalence in the mere investment terms suffices

5) At a subsidiary level, the Commission will also examine the owner of the passive infrastructure's business plan, in order to determine if there is a feasible business case for the network intended to be built.

### Revenue based PPP

The revenue based PPP are those where a financial participation from external, public funds is necessary for building the network. The concept is that the operation is not commercially viable because the initial cost is too high to be repaid from the operation income during the lifetime. Thus the initial investment is lowered to the private investor by adding public funds.

Attention, there are at list two sub-models here:

- In the first, the public funding is given directly to the private partner, who becomes the owner of the network, that is later (at the end of the concession period or even never) transferred to public ownership.
- In the second, the beneficiary of the public funds is a public partner (municipality or similar), which assign the build-out of the network via a public procurement process. In some cases, the procurement project is done together with the private partner (they jointly assign the works to a third party), or more often, the private partner (co-investor) is chosen in the same procurement process (the private partner builds the public part of the network and the private part of the network).

The availability based PPP are those where financial participation from external, public funds is necessary to partly cover the full operative costs during the operation. The concept is that as full operative cost (including the amortisation/depreciation of the network) cannot be covered by the operative income, some public funding is added to close the financial frame.

The good point of this approach is that there is no need for big upfront public investment, the weak point is that operating risk is transferred to the public partner (the difference between the total cost and income has to be covered).

### Affordability (Business model) evaluation

#### Justification for the public contribution

**Does this project involve State Aids according to EU and national regulation?**

Yes

No

**Important Note:**

The EC Treaty pronounces the general prohibition of State aid. The founders, however, saw of course that in some circumstances, government interventions are necessary for a well-functioning and equitable economy. Therefore, the Treaty leaves room for a number of policy objectives for which State aid can be considered compatible. By complementing the fundamental rules through a [series of legislative acts](#) that provide for a number of exemptions, the European Commission has established a worldwide unique system of rules under which State aid is monitored and assessed in the European Union. This legal framework is regularly [reviewed](#) to improve its efficiency and to respond to the call of the European Councils for less but better targeted State aid in order to boost the European economy.

In most cases a grant from the Structure Funds may constitute State Aid in the sense of Article 107 of the Treaty on the functioning of the EU (TFEU) which means:

*Article 107*

*1. Save as otherwise provided in the Treaties, any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favoring 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.*

*2. The following shall be compatible with the internal market:*

*(a) aid having a social character, granted to individual consumers, provided that such aid is granted without discrimination related to the origin of the products concerned;*

*(b) aid to make good the damage caused by natural disasters or exceptional occurrences;*

*(c) aid granted to the economy of certain areas of the Federal Republic of Germany affected by the division of Germany, in so far as such aid is required in order to compensate for the economic disadvantages caused by that division. Five years after the entry into force of the Treaty of Lisbon, the Council, acting on a proposal from the Commission, may adopt a decision repealing this point.*

*3. The following may be considered to be compatible with the internal market:*

*(a) aid to promote the economic development of areas where the standard of living is abnormally low or where there is serious underemployment, and of the regions referred to in Article 349, in view of their structural, economic and social situation;*

*(b) aid to promote the execution of an important project of common European interest or to remedy a serious disturbance in the economy of a Member State;*

*(c) aid to facilitate the development of certain economic activities or of certain economic areas, where such aid does not adversely affect trading conditions to an extent contrary to the common interest;*

(d) aid to promote culture and heritage conservation where such aid does not affect trading conditions and competition in the Union to an extent that is contrary to the common interest;

(e) such other categories of aid as may be specified by decision of the Council on a proposal from the Commission.

Detailed guidelines on state aid are provided in the “Community Guidelines for the application of State aid rules in relation to rapid deployment of broadband networks” (Official Journal C 235, 30.9.2009, p.7) [http://ec.europa.eu/competition/state\\_aid/legislation/specific\\_rules.html](http://ec.europa.eu/competition/state_aid/legislation/specific_rules.html)For).

For additional information, please refer also to the “Minutes of the meeting of the Working Group for the construction of broadband networks in Poland” published on the JASPERS website for an overview of state aid rules in broadband and best practice example of state aid notification in Spain:

<http://www.jaspers-europa-info.org/index.php/workpap/knowledgeeconomywp.html>.

**If yes, please give in the table below the amount of aid, and, for approved aid the state aid number and the reference of the approval letter, for block-exempted aid the respective registry number, and for pending notified aid the state aid number.**

Sources of aid (local, regional, national and Community):	Amount of aid euro	State Aid number/ registry number for block-exempted aid	Reference of approval letter
Approved aid schemes, approved ad hoc aid, or aid falling under a block exemption regulation:			
Aid foreseen under pending notifications (ad hoc aid or schemes) :			
Aid for which a notification is outstanding (ad hoc aid or schemes)			
Total aid granted:			
Total cost of the investment project			

### Impact of Community assistance on project implementation

**For each affirmative answer, give details in the text box. :**

**Will Community assistance:**

a) **accelerate implementation of the project?**

Yes X No

**b) be essential to implementation of the project?**

Yes X No

**Extend the text box as necessary.**

Sample content:

Community should assist with project implementation as a contribution to Europe 2020 Digital Agenda. Community should invest by providing funds supporting the implementation of broadband infrastructure as it will have a huge impact on local-rural economy, improve communication and provide employment by creating new jobs.

Community assistance would help the project during implementation, with avoiding risky loans, and postponing. There are also organizations forming in several countries to support rural areas and communities in improving their way of living by:

- providing training (financial, technical education)
- assist with beneficial finance plans to support the development and deployment of broadband network.

There are community broadband resource programs (mostly in the US.) promoting the active engagement of communities during their broadband development and implementation by virtual support and by consultation (e.g. vendor-neutral advice).

Therefore Community Assistance is crucial to broadband projects in gathering non-EU funds, getting people involved and educated about exploiting their opportunities which will emerge with the usage of broadband network.

**EXPECTED CONTENTS AND SPECIFIC NOTES:**

The rationale for the Community assistance is to accelerate the necessary investments in the key infrastructure of national importance. The answer to the above question should therefore be "Yes". This text should be used to explain what would be the consequences of non-approval of the Assistance (e.g. non-compliance, delayed or partial implementation, financing through more expensive loans, postponement of the project to indefinite future, etc.).

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Example:

“The Community Assistance will accelerate the implementation of this project that brings a key contribution to the Europe 2020 objectives in the field of Digital Agenda. The amount of the funds needed from the Community is considerable (..... Euro representing .....% of the eligible cost), funds that can not be easily attracted from other sources. Without the EU funds, due to market failure and confirmed in public consultation with infrastructure operators, it is unlikely that investment in areas without broadband infrastructure would take place in the foreseeable future, and digital divide would persist.

The EU financial assistance is essential for (.....) to enable the country /region to comply with the Digital Agenda objectives (specify how the project contributes to the objectives). The EU grant is also essential because of the contribution of this project to the regional development having in view the opportunity for further investments (by increasing the attractiveness of the region for investment).”

**Financing plan**

The decision amount and other financial information in this section must be coherent with the basis (total or public cost) for the co-financing rate of the priority axis. Where private expenditure is not eligible for financing under the priority axis it shall be excluded from the eligible costs; where private expenditure is eligible it may be included.

**Cost breakdown**

**Note: Do not change the structure of this table! Cost items not foreseen in this table should be included in any of the other items. Include footnotes to explain where pertinent.**

**In case of doubts, request for instructions from the MA.**

	Euro	TOTAL PROJECT COSTS	INELIGIBLE (1)	ELIGIBLE COSTS (C)=(A)-(B)
1	Planning/design fees			
2	Land purchase			
3	Building and construction			
4	Plant and machinery			
5	Contingencies(2)			

6	Price adjustment (if applicable)(3)			
7	Technical assistance			
8	Publicity			
9	Supervision during construction implementation			
10	Sub-TOTAL			
11	(VAT(4))			
12	TOTAL (5)			

#### EXPECTED CONTENTS AND SPECIFIC NOTES:

- Ineligible costs comprise (i) expenditure outside the eligibility period, (ii) expenditure ineligible under national rules (Article 56(4) of Regulation (EC) No 1083/2006), (iii) other expenditure not presented for co-financing. NB: The starting date for eligibility of expenditure is the date of receipt of the draft operational programme by the Commission or 1 January 2007, whichever is the earlier. The periods will be amended for the new financial perspective.
- Contingencies should not exceed 10% of total investment cost net of contingencies. These contingencies may be included in the total eligible costs used to calculate the planned contribution of the funds. Amount of eligible contingencies depends also on national regulation.
- A price adjustment may be included, where relevant, to cover expected inflation where the eligible cost values are in constant prices. As a risk mitigation measure, the funds can be tendered as per “turn key” conditions.
- Where VAT is considered as eligible, give reasons.
- Total cost must include all costs incurred for the project, from planning to supervision and must include VAT even if VAT is considered non eligible.

#### Additional notes:

- In Table Column A, make sure that the value obtained by doing: (item 10: subtotal) – (item 5: contingencies) – (item 6: price adjustments) is equal to E 1.2 (item 3: Total investment cost, excl. contingencies, undiscounted)

#### Total planned resources and planned contribution from the Funds

The funding gap rate will be calculated in the accompanying excel worksheet (the following table can be copied directly, after inserting numbers for calculations in excel). This should be applied to

the eligible cost to calculate the “amount to which the co-financing rate for the priority axis applies” (Article 41(2) of Council Regulation (EC) No 1083/2006). This is then multiplied by the co-financing rate of the priority axis to determine the Community contribution.

		Value
	Eligible cost (in euro, not discounted)	
2.	Funding gap rate (%), if applicable =	
3.	Decision amount, i.e. the “amount to which the co-financing rate for the priority axis applies” (Article 41(2)) = (1)*(2).	
4.	Co-financing rate of the priority axis (%)	
5.	Community contribution (in euro) = (3)*(4)	

### Sources of co-financing

In the light of the results of the financing gap calculation (where relevant) the total investment costs of the project shall be met from the following sources:

Source of total investment costs (€)	Of which	
--------------------------------------	----------	--

					(for Infor
Total investment cost	Community assistance	National public (or equivalent)	National private	Other sources (specify)	EIB/EIF loans:
(a)= (b)+(c)+(d)+(e)	(b)	(c)	(d)	(e)	(f)

### EXPECTED CONTENTS AND SPECIFIC NOTES:

Enter all contributions by national and local authorities in column (c). Also co-financing loans taken up by the beneficiary (with the exception of EIB/EIF loans) should be included in (c).

The details of the decision(s) on national public financing, loans, etc., should be provided. Loan financing, where it is used, is attributed to the body liable to repay the loan, national public or national private. Only in the case of EIB/EIF loans is it requested to identify the sum of loan financing for information purposes.

**Expenditure already certified**

**Have expenditure for this major project been already certified?**

Yes    No   

**If yes, state the amount: ..... EUR.**

**Annual financing plan of Community contribution**

**The Community contribution shall be presented below in terms of the share of annual programme commitment.**

(in Euro)	2007	2008	2009	2010	2011	2012	2013
[CF/ ERDF - specify]							

The table is just a sample. The accompanying excel file contains the yearly split of the operation, that will be copied here.

**Compatibility with Community/National (non-EU members) policies and law**

**With regard to Article 9 (5) of Regulation (EC) No 1083/2006 provide the following information:**

**Has an application been made for assistance from any other Community source (TEN-T Budget, LIFE+, R&D Framework Programme, other source of Community finance) for this project?**

Yes    No   

**If yes, please give details (financial instrument concerned, reference Nos, dates, amounts requested, amounts granted, etc.). Fill the text box. Extend the text box as necessary.**

**Sample content:**

- Structural and cohesion funding instruments under operational programs (eg public local authorities, NGOs, academia, private sector, etc.).
- Funding budget proposed by the European Commission under the "Connecting Europe Facility" program for which will be allocated a fund of 9.2 billion euros in the period 2014-2020 and will support investment in fast networks of broadband and pan-European digital services.
- Investments in broadband networks are also an essential part of the European Economic Recovery Plan, in which the Commission has allocated 1.02 billion euros through the European Agricultural Fund for Rural Development (EAFRD) to extend broadband services in rural areas.

**Is this project complementary to any project already financed or to be financed by the ERDF, ESF, Cohesion Fund, TEN-T Budget, other source of Community finance?**

Yes    No   

**If yes, give details (provide precise details, reference Nos, dates, amounts requested, amounts granted, etc.). Fill the text box. Extend the text box as necessary.**

**Has an application been made for loan or equity support from EIB / EIF for this project?**

Yes    No   

**If yes, please give details (financial instrument concerned, reference Nos, dates, amounts requested, amounts granted, etc.). Fill the text box. Extend the text box as necessary.**

**Has an application been made for assistance from any other Community source (including ERDF, ESF, Cohesion Fund, EIB, EIF, other sources of Community finance) for an earlier phase of this project (including feasibility and preparatory phases)?**

Yes     No

**If yes, please give details (financial instrument concerned, reference Nos, dates, amounts requested, amounts granted, etc.). Fill the text box. Extend the text box as necessary.**

**EXPECTED CONTENTS AND SPECIFIC NOTES:**

Example:

“An application for ISPA/PHARE assistance has been made for the preparation of this CF/ERDF application and supporting documents (feasibility studies, environmental studies, tender documents, etc.). This is part of the TA no. (.....).”

**Is the project subject to a legal procedure for non-compliance with Community legislation?**

Yes     No

**If yes, please give details. Fill the text box. Extend the text box as necessary.**

### Publicity measures

**Give details of the proposed measures to publicise Community assistance (for example, type of measure, brief description, estimated costs, duration, etc.). Fill the text box. Extend the text box as necessary.**

Public measures will be implemented in order to raise public awareness and acceptance among the population. The measures will aim:

- Increasing the beneficiaries' awareness of Community assistance
- Increasing the beneficiaries awareness' if the value of the improved services
- Increasing the beneficiaries awareness' willingness to pay adequate fees for the improved services
- Inform the public about the project measures, cost and benefits in order to ensure project acceptance through transparency.

Total budget estimated for the implamentation of publicity measures is 15.000 Euro in current prices

The main part of the publicity measures shall be implemented during the 1<sup>st</sup> and 3<sup>rd</sup> year  
**Billboards** – depending of the rural area, placed on the most visible positions, according to the National regulation, Billboard should mark the start of the project implementations, and inform publicity that this type of project is implementing in the area, they also should provide information about the project, partners, investor (donator) and some of the main objectives and benefits the publicity shall gain through the project. By the end of the project billboards should be removed not later than 6 months and replaced by the adequate plaques

**Posters** – will be displayed on the premises of the bodies implementing or benefiting from the Project. All information shall mention that project is part-financing by the EU and state percentage of assistance funded by the Community instrument considered.

**Publications**-shall concering clear indication that EU is participating in project funding as well as Community contribution with national and regional emblem in use.

**Electronic promo** paterial-presentations, CD-ROMs, web-portal with audio visual materials adequate for efficant distribution of projects inforamtions

**Events**-press conferences should held quarterly to inform publicity about project implementation and to increase awareness about broadband and benefits that can be gained. Every event should be followed with packages (promo material, flags, etc) which are displaying involvement of the EU and Community.

**Campaign** should be proactive, with promo activites in order to inform the publicity about benefits they can gain through project, with presentations ad demonstration of services, info-days about the project, measures directed to the general public TV media, radio, print media etc. info day should be organized in order to inform the publicity of many benefits and higher values that broadband is providing.

EXPECTED CONTENTS AND SPECIFIC NOTES: Example (to be modified as required according to national regulation):

“All publicity activities within the Project will be implemented in compliance with the provisions of EU Regulation No. 1159/2000. The measures will include:

- Erection of billboards according to established standard (under § 6.1 of the above mentioned Regulation);
- After finalization of works, the billboards will be removed not later than six months after completion of the work and replaced by permanent commemorative plaques for infrastructures accessible to the general public;
- Posters will be displayed on the premises of bodies implementing or benefiting from the Project (County councils, local councils, regional and local environmental agencies, employment agencies, vocational training centres, chambers of commerce and industry, development agencies, etc.;
- All notifications of aid to beneficiaries sent by the competent authorities shall mention the fact of part-financing by the European Union and may state the amount or percentage of the assistance funded by the Community instrument concerned;
- All publications (such as booklets, leaflets and newsletters) concerning the Project will contain a clear indication on the title page of the European Union's participation and, where appropriate, that of the Fund concerned as well as the Community emblem if the national or regional emblem is also used;
- Information will be also available by electronic means (e.g. websites) and by audio-visual material (presentations, CD-ROMs, etc.) with due regard to new technologies which permit the rapid and efficient distribution of information and facilitate a dialogue with the general public;
- In all events such as conferences, seminars, fairs and exhibitions in connection with the Project Implementation it will be clearly stated that make the Community contribution to these assistance packages explicit by displaying the European flag in meeting rooms and using the Community emblem on documents.

The details of the campaigns have still to be designed. The measures directed to the general public will include, but not be limited to campaigns in print, radio and TV media.

During the project implementation, the progress reports of the project will include copies of the communication material produced and evidence of the information events carried out in the period of time reported.

Publicity measures will be implemented in order to raise public awareness and acceptance among the population. The measures aim at:

- Increasing the beneficiaries' awareness of the Community assistance
- Increasing the beneficiaries' awareness of the value of the improved services
- Increasing the beneficiaries' willingness to pay adequate fees for the improved services
- Inform the public about the project measures, cost and benefits in order to ensure project acceptance through transparency.



The total budget estimated for the implementation of publicity measures is (.....) Euro (in current prices).

The main part of the publicity measures shall be implemented during the years

(.....) and (.....).”

## PPP4Broadband model Risk allocation

### Risk allocation

As a general rule, in a PPP project risk is distributed between the partners according to the participation in the investment. But as the public partner has no or little possibility to influence the private partner's (or in case a SPV in the joint venture is created) decisions, this could pose some serious risks to the public side. Depending also on national regulations, maximum care must be taken in excluding the possibility of operating debts to be claimed from the public partner. Other risks, that have to be dealt with, are:

- Risk of losing property rights - limitations on how the private partner can exercise property on the network must be set;
- Risk of covering financial operating costs – has to be defined in the PPP contract;
- The private partner can go bankrupt. Special care must be given to this case (depends on national regulation). The procedures on how the concession for running the network will be re-assigned and what happens with the rights of the initial private partner (the rights of the private partner are considered immaterial assets).

### Risk allocation matrix

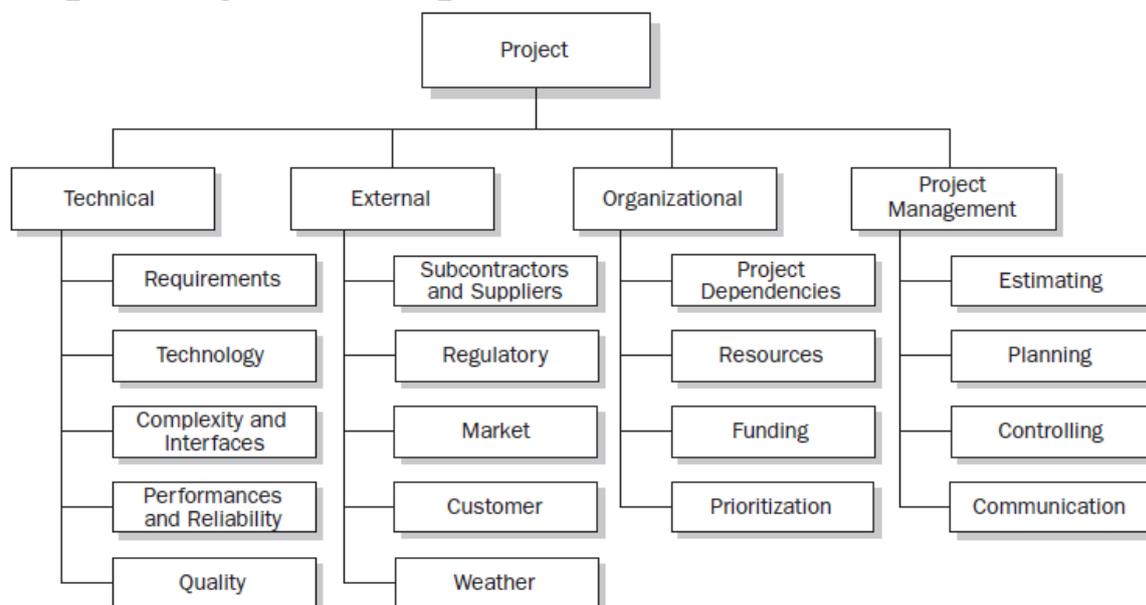
The risk matrix (presented here again for clarity) is the basis for the following templates. Part of the Risk assessment is included also in the CBA analysis.

Risk category	Description	Consequence	Mitigation	Preferred allocation
Affordability pre-assessment				
Risk allocation and management pre-assessment				
Bankability				
Business model pre-assessment				

Value for money pre-assessment				

In addition to the overall broad risk categories identified in Table B.1.4.1. which main aim is to protect the scope and objectives of the project, standard project methodologies recommends categorization of the risks according to key project success criteria as are: time, cost and quality. The categorization is provided in the proceeding Figure.

**Figure 1. Project Risks Categorisation**



The Risk Breakdown Structure (RBS) lists the categories and sub-categories within which risks may arise for a typical project. Different RBSs will be appropriate for different types of projects and different types of organizations. One benefit of this approach is to remind participants in a risk identification exercise of the many sources from which project risk may arise.

Source (PMI 2008:280)

**For each risk category, define risk allocation methodology. Fill the text box. Extend the text box as necessary.**

**Sample content:**

**Affordability pre-assessment-**affordability relates to the capacity to pay for building, operating and maintaining, it requires a careful analysis of operating and maintenance costs, financial model with alternatives costs etc...The assessment of the costs translates into an estimate of their required revenues to meet those costs.

- Users can directly pay for the service (analyse of the users, their willingness to pay, sometimes public partner can subsidize the service in order to make them affordable)
- Authority makes the payments(Authority will enter the payment obligations over the life of PPP contract)

Sometimes the option is to combine direct charges to users with service fees may need to be examined.

Affordability relates to the financial balance and public expenditure as well. **A PPP project considered to be affordable if the public expenditure associated with it can be accommodated within the public sector's budget cailing over time.**

**Risk allocation and management pre-assessment-** PPP project risk can broadly be divided into commercial risk and legal and political risk,

**Commercial risk** can be divided into supply and demand risks. Supply risk concerns mainly ability of the partners to deliver. Demand risks relates to insufficient user volume compared to base case assumption.

**Legal and political risk-**relates to legal framework, dispute resolution, regulatory framework, government policy, taxation, expropriation and nationalisation.

In general **private** sector is better placed to **assume commercial risk** while the **public sector** is better placed **assume legal and political risk.**

**Bankability-** project is bankable if lenders are willing to finance it. The majority of third-party funding for PPP projects consists of long-term debt finance, which typically varies from 70% to as much as 90% of total funding requirements. Debt is cheaper source of funding than equity, as it carries relatively less risk. Bankability will be increased by giving public assurance to the financing body. Payment insurance instruments should be given as a warranty for successful contract implementation.

**Business model pre-assessment-** SPV(s) of any size is most appropriate legal body to be founded, private and public partner should agree about the way how it should be managed, supervisory (steering committee etc.) and how will divide risk, and revenue from it, cover all potential problems with market penetration, and align interests. Ownership of the network should be split between private and public partner. There is possibility that concession can be

EXPECTED CONTENTS AND SPECIFIC NOTES:

Example: "Bankability will be increased by giving public assurance to the financing body. The risk for the public partner is limited by ....(some payment insurance means, given by the private partner)."



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## PPP4Broadband model CBA

### Cost Benefit analysis customised for selected PPP4Broadband model

The purpose for requiring CBA for major projects is twofold. First, it demonstrates the attractiveness of the project from an economic point of view and its contribution to the goals of EU regional policy. Second, it provides evidence why the contribution of the Funds is needed for the project to be financially viable. Both determine whether the project will be approved and

CBA is an essential tool for estimating the economic benefits of projects. In principle, all impacts should be assessed: financial, economic, social, environmental, etc. In practice the one which are quantified are assessed. The objective of CBA is to identify and monetise (i.e. attach a monetary value to) all possible impacts in order to determine the project costs and benefits; then, the results are aggregated (net benefits) and conclusions are drawn on whether the project is desirable and worth implementing. Costs and benefits should be evaluated on an incremental basis, by considering the difference between the project scenario and an alternative scenario without the project.

The impact must be assessed against predetermined objectives. By evaluating a project against microeconomic indicators, CBA can assess its consistency with and relevance to specific macroeconomic objectives. In the regional policy context, CBA is applied to assess the relevance of a given investment project to EU regional policy objectives.

The level of analysis used in CBA must be defined with reference to the society in which the project has a relevant impact. Costs and benefits may be borne and accrue at different geographical levels, so a decision has to be taken on which costs and benefits should be considered. This typically depends on the size and scope of the project. Municipal, regional, national and even EU level impacts can be considered.

When estimating the potential impacts of a project, analysts always face uncertainty. This must be properly taken into account and dealt with in CBA. A risk assessment exercise is an essential part of a comprehensive analysis, as it enables the project promoter to better understand the way the estimated impacts are likely to change should some key project variables turn out to be different from those expected. A thorough risk analysis constitutes the basis for a sound risk-management strategy, which in turn feeds back into the project design.

### COST-BENEFIT ANALYSIS

This section should be based on the Guidelines on the methodology for carrying out the cost-benefit-analysis of major projects. In addition to the summary elements to be provided, the full cost-benefit analysis document shall be provided in support of this application (the accompanying excel file).

#### EXPECTED CONTENTS AND SPECIFIC NOTES:

Before filling in this section, make sure that the CBA has been carried out in line with the guidance documents issued by the EU (hereafter referred to as the “CBA Guidelines”):

- WORKING DOCUMENT 4 (WD4), Guidance on the methodology for carrying out Cost-Benefit Analysis (DG Regio, August 2006),
- Guide to COST-BENEFIT ANALYSIS of investment projects - Structural Funds, Cohesion Fund and Instrument for Pre-Accession (DG Regio, June 2008) and guidelines of the national authorities:
- National CBA Guidelines to be requested from the MA, where relevant.

The CBA is articulated around three steps, with their own rationale, which need to be followed:

- Financial analysis, aimed at determining (i) whether the project needs EU co-financing (through the determination of its financial profitability without EU contributions); (ii) the level of required external grants incl. EU Grants (through Funding Gap Analysis or through calculation of proportional level of state aid); (iii) whether the project fulfils demand and minimum affordability requirements of the population served, and long-term financial sustainability requirements (in relation to the future operator of the new infrastructure)
- Economic analysis, aimed at determining whether the project is worth co-financing;
- Risk assessment, addressing sensitivity and (probabilistic) risk analysis, with a view of studying the probability that a project will achieve a satisfactory performance.

Pay attention to the following:

- Make sure that national standards and decisions by the national authorities on the following issues are taken into consideration:
  - Eligibility of certain cost types
  - Recoverability of VAT by the project beneficiary, VAT eligibility and financing
  - Maximum limits for contingencies
  - Economic lifetime of technical components
  - Method for the calculation of price adjustments for inflation
  - Maximum contributions from the EU and national sources (funding gap methodology or state aid proportionality)
  - Projections of macroeconomic indicators (GDP growth, exchange rates, inflation rates, etc.)
  - Methodology for tariff calculation is checked beforehand with the relevant authorities (MA, National Telecom regulator etc.) and correctly considered/presented in the CBA.
- Always indicate when presenting monetary values (i.e. investment cost, O&M cost, tariffs): in which currency they are presented, if they are expressed in current/constant prices and if they include/exclude VAT;
- Separators for thousands and millions as well as commas should be applied in a consistent manner throughout the documents.

- Standard AF tables require monetary values to be rounded to the last Euro;
- Figures presented in tables depicting long term forecasts should present figures rounded to hundreds or thousands;
- In the case of the financial indicators (funding gap, FRRs), figures should be presented with only one decimal;
- Make sure that ALL figures are consistent across the sections
- Check the results of the financial and economic CBA – IRRs, NPVs (to make sure that the results make sense)
- Make sure the correct discount rates are used (the CBA Guidelines recommend 5% for financial CBA and 5.5% for economic CBA, which are REAL discount rates, but are usually defined also at national level). If the CBA is performed in current (nominal) prices, the discount rates should be adjusted. Consult in this regard with the MA.
- There is a difference between “eligible expenditure” (EE), and the “eligible cost” (EC). In the calculation of the Funding Gap rate (R), the Maximum EE (which does not include contingencies) is equal to the discounted investment cost minus the discounted net revenues (Max EE = DIC – DNR and  $R = \text{Max EE} / \text{DIC}$ ). On the other hand, the EC (which includes contingencies) is used to calculate the decision amount (DA) based on the Funding Gap Rate ( $\text{DA} = \text{EC} * R$ ) – Avoid confusions.

## Financial analysis

### Sample content:

The main purpose of the financial analysis is to compute the project's financial performance indicators. This is usually done from the point of view of the owner of the infrastructure. However, when the owner and the operator are not the same entity, a consolidated financial analysis should be considered. The methodology to be used is discounted cash flow (DCF) analysis.

The financial analysis carried out as part of a major project's CBA should particularly aim to:

- Evaluate the financial profitability of the investment and own (national) capital
- Determine the appropriate (maximum) contribution from the Funds
- Check the financial sustainability of the project

The financial profitability of the investment can be assessed by estimating the financial net present value and the financial rate of return of the investment (FNPV/C and FRR/C). These indicators show the capacity of the net revenues to remunerate the investment costs, regardless of the way these are financed.

The determination of the EU grant is done in accordance with the provisions of Art. 55. Project revenues must be properly taken into account so that the Funds contribution is modulated according to the project's gross self-financing margin and no over-financing occurs. The financial sustainability of the project should be assessed by checking that the cumulated (undiscounted) net cash flows are positive over the entire reference period considered. The net cash flows to be considered for this purpose should take into account investment costs, all (national and EU) financial resources and net revenues.

The key elements from the financial analysis of the CBA should be summarised below.

**Short description of methodology and specific assumptions made. Fill the text box. Extend the text box as necessary.**

EXPECTED CONTENTS AND SPECIFIC NOTES:

- Present general approach of the financial analysis – refer to EU and national CBA Guidelines.
- If applicable, refer to funding gap calculation method - in line with EU guidelines and Working Document 4 for the Programming Period 2007-2013 and refer to financing rules set in relevant OP.
- Broadband projects are in the great majority of cases revenue-generating projects. Note that if the project is subject to State Aid the EU grant is not determined on the basis of the funding-gap. Maximum allowed grant rate may be adopted in such a case, however the proportionality of assistance/grant funding needs to be proven.
- Mention the incremental approach required for the CBA, that means the project is evaluated on the basis of the differences of the “with project” and “without project” scenario. Describe briefly the “without project” scenario.
- In general, costs and revenues generated by the project are those accruing to the investor. However, when the owner and the operator are not the same (e.g. in a DBOT model), a consolidated financial analysis needs, in general, to be carried out. If the project foresees private partners, in order to compare the level of adequate returns on investment with the market practice, it is recommended to complete the analysis with sector financial benchmarks (e.g. Weighted Average Cost of Capital of the telecommunication operators). That is to prove that no excessive profits are gained by either of the stakeholders.

List and briefly describe the main assumptions made in the CBA:

- Basic assumptions should be consistent across the sector in the country
- indicate the time horizon/reference period used in the analysis, which should be consistent with the economic life of the main facilities financed within the project
- financial discount rate as recommended in the CBA Guidelines (5% in constant prices),
- macro-economic data forecasts - inflation, exchange rates, GDP growth, household income growth, population growth
- useful economic lifetime and depreciation rates assumed for individual project assets
- Forecasts of O&M costs and revenues
- Tariffs for users and if VAT is applied

Mention the sources for all data used in the financial analysis (National Statistics Institute, National/regional Broadband plans, project beneficiary, CBA Guidelines, etc)

**Main elements and parameters used in the CBA for financial analysis. The table is only as an example, the effective table is contained in the accompanying excel file, and will be copied in the document when numbers have been inserted.**

	Main elements and parameters	Value Not discounted	Value Discounted (Net Present Value)
1	Reference period (years)		
2	Financial discount rate (%) <sup>5</sup>		
3	Total investment cost excluding contingencies (in euro, not discounted) <sup>6</sup>		
4	Total investment cost (in euro, discounted)		
5	Residual value (in euro, not discounted)		
6	Residual value (in euro, discounted)		
7	Revenues (in euro, discounted)		
8	Operating costs (in euro, discounted)		
Funding gap calculation <sup>7</sup>			
9	Net revenue = revenues – operating costs + residual value (in euro, discounted) = (7) – (8) + (6)		
10	Investment cost – net revenue (in euro, discounted) = (4) – (9) (Article 55 (2))		
11	Funding gap rate (%) = (10) / (4)		

**EXPECTED CONTENTS AND SPECIFIC NOTES:**

Where VAT is recoverable, the costs and revenues should be based on figures excluding VAT.

5 Specify if the rate is real or nominal. If the financial analysis is conducted in constant prices, a financial discount rate expressed in real terms shall be used. If the analysis is conducted in current prices, a discount rate in nominal terms shall be used.

6 Investment cost should here exclude contingencies in accordance with working document number 4.

7 This does not apply: 1) for projects subject to the rules on State aids in the meaning of Article 87 of the EC Treaty (see point G.1), pursuant to Article 55(6) of Regulation (EC) No 1083/2006 and 2) if operating costs are higher than revenues the project is not considered as revenue generating in the

sense of Article 55 of Regulation (EC) No 1083/2006, in which case, ignore items 9 and 10 and set funding gap to 100%.

Additional notes:

- The values in this table are usually expressed in constant prices (enter in this case a real discount rate of 5% in line 2)
- Total Investment Costs in line 3 includes both eligible + ineligible project cost, but without VAT, and excluding CONTINGENCIES. This value is undiscounted.
- Line 4 presents the discounted value of total investment cost presented in line 3 (also excl. contingencies)

### Main results of the financial analysis

**The table is only as an example, the effective table is contained in the accompanying excel file, and will be copied in the document when numbers have been inserted.**

	Without Community assistance (FRR/C) A		With Community assistance (FRR/K) B8	
1. Financial rate of return (%)		FRR/C		FRR/K
2. Net present value (euro)		FNPV/C		FNPV/K

Additional notes:

- FNPV/C & FRR/C is a measure of investment return regardless the way it is financed (i.e. regardless the project financial structure)
- FNPV/K & FRR/K is a measure of the project return considering its financial structure, i.e. profitability to the national capital employed / from "investor(s)" perspective

### Revenues generated over its lifetime

If the project is expected to generate revenues through tariffs or charges borne by users, please give details of charges (types and level of charges, principle or Community legislation on the basis of which the charges have been established).

**Do the charges cover the operational costs and depreciation of the project? Fill the text box. Extend the text box as necessary.**

**Sample content:**

The operating costs comprise all the data on the disbursements foreseen for the purchase of goods and services, which are not of an investment nature since they are consumed within each accounting period.

- The data can be organized in a table that includes:
- The direct production costs (consumption of materials and services, personnel, maintenance, general production costs);
- Administrative and general expenditures;
- Sales and distribution expenditures.

These components together comprise the bulk of the operating costs. In the calculation of operating costs, all items that do not give rise to an effective monetary expenditure must be excluded, even if they are items normally included in company accounting (Balance Sheet and Net Income Statement). In particular, the following items are to be excluded, as they are not coherent with the discounted cash flow method:

- Depreciation, as it is not effective cash payment;
- Any reserves for future replacement costs; in this case as well, they usually do not correspond to a real consumption of goods or services;

Any contingency reserves, because the uncertainty of future flows should be taken into consideration in the risk analysis and not through figurative costs.

The following items are usually not included in the calculation of future revenues:

- transfers or subsidies;
- VAT or other indirect taxes charged by the firm to the consumer, because these are normally paid back to the fiscal administration.

**Financial sustainability** -determined the investment costs, the operating revenues and costs and the sources of finance, it is now possible and helpful to determine the project's financial unsustainability. A project is financially sustainable when it does not incur the risk of running out of cash in the future. The crucial issue here is the timing of cash proceeds and payments. Sustainability occurs if the net flow of cumulated generated cash flow is positive for all the

**EXPECTED CONTENTS AND SPECIFIC NOTES:**

According to the CBA Guidelines (WD 4) "tariffs should at least cover operating and maintenance costs as well as a significant part of the assets' depreciation". Clearly indicate what the cost-recovery level is assumed during and after the end of the period of analysis. Refer to analysis carried out in the CBA report. If project is having a significant funding gap it is very unlikely that depreciation could be covered. The answer to the question about coverage of operational cost and depreciation should in principle be "No", with explanation if the project is able to cover operational cost (i.e. financial sustainability of the project) or not.

- In any case, the financial sustainability of the project should be demonstrated.

Refer to the cash-flow projections that should show that cumulated net cash- flows are not negative over the entire reference period. Calculation of financial stability should include taxes (e.g. VAT). Project beneficiary is obliged to prove that enough financial resources are secured, which can consistently match disbursements year by year needed to keep the project operating and maintained.

- 
- Indicate the benchmarked prices (in case no national benchmark exist, provide international comparison).
- Provide information if the national regulator has been consulted on the tariff setting methodology. Present the future tariffs methodology adopted by the project beneficiary during project implementation and thereafter.
- Note: In most cases, to comply with state aid guidelines, broadband projects are designed as wholesale projects. Therefore, revenues should be calculated based on the services provided by the wholesale operator. Additionally, it is recommended to analyse if the end user tariffs would allow for the profit margin for last mile operators normally expected on the market.

**Do the charges differ between the various users of the infrastructure? Fill the text box. Extend the text box as necessary.**

**Sample content:** As the network operator cannot offer services to the end user (must be only wholesaler, so other service providers can offer services to the end user over the infrastructure), the network operator cannot influence the price that will be paid by the end user. When seen from the infrastructure side, the services cannot be divided/discriminated by residential/business user, but can be differentiated by different SLA (like we have, the basic price for 40/20Mbps is same for all, but an addition of 30% to that price we can grant problem resolution in 1 business day (generally it's 3 business days)

That difference should be based on quality of service provided to the end users.

Regulation of market should be considered here, because of critical points that can cause market failure.

EXPECTED CONTENTS AND SPECIFIC NOTES:

Present, if differences exist, the charges applied for various users of infrastructure (i.e. for households or business users). Explain if there is any cross-subsidization between them. Explain legal provisions in this regard, if applicable.

**Are the charges proportional to the use of the project/real consumption? Fill the text box. Extend the text box as necessary.**

**Sample content:** In Slovenia there are different system providing broadband. In last years with fast developin g of the fibre broadband. It was developod the following type of pricing system. The prices of the tripleplay basic pagkage in Slovenia are around 40 EUR-o. In this price the commercial operator pay approxoinately 1/3 of this price, for usage of the fibre infrastutstructure. From these 1/3 the division betwen public and private partner the divisions depends on stipulated contract, the investment, responsibility.... Basicaly the private partner keep 2/3 and public partner 1/3.

**EXPECTED CONTENTS AND SPECIFIC NOTES:**

Explain the basic methodology applied for the calculation of tariffs and if these have a relation to, e.g. the bandwidth, or quality of service.

If applicable, explain if all costs related to the service provisions are included in the tariff.

**If no tariffs or charges are proposed, how will operating and maintenance costs be covered? Fill the text box. Extend the text box as necessary.**

**Sample content:**

This kind of networks are realy not often for the commercial user. There were times ago special project, financed 100% from the EU broadband on very close area – villages called e-points, free of charge for users. But these project were also time limited for 3 years. In other cases somebody must pay the fee if not those project has short life.

**EXPECTED CONTENTS AND SPECIFIC NOTES:**

In most cases, not applicable, unless the project is a closed network, solely dedicated for the use of e.g. public institutions. In such a case, where the tariffs are not implemented, the description of the financing the project during the operational phase should be clearly explained.

In some countries however, broadband services may be considered part of the services of general economic interest and part of the operating costs covered through general taxes. It should be noted however, that tariffs in projects requesting EU co-financing should reflect the real consumption and polluter-pays-principle.

## Socio-economic analysis

**Provide a short description of methodology (key assumptions made in valuing costs and benefits) and the main findings of the socio-economic analysis. Fill the text box. Extend the text box as necessary.**

Sample content:

The economic analysis appraises the project's contribution to the economic welfare of the region or country (by taking the same approach as the financial analysis: scenario with and without the project). It is made on behalf of the whole of society instead of just the owners of the infrastructure, as in the financial analysis. The key concept is the use of accounting shadow prices, based on the social opportunity cost and willingness to pay, instead of observed distorted prices.

The methodology can be summarized in five steps:

1. **Conversion of market to accounting prices.** CBA objective is to appraise the social value of the investment. Observed prices are often distorted (by market inefficiency), in those cases shadow (accounting) prices should be used.
  - a. **Dealing with wage distortion:** due macroeconomic imbalances (constant unemployment, labour market distortions) observed wages might not reflect to the social value of working. In such cases correction of observed wages are necessary using conversion factors for computing shadow wages.
  - b. **Fiscal corrections:** indirect taxes (e.g. VAT), subsidies and pure transfer payments (e.g. social security payments) must be deducted. However, prices should be gross of direct taxes. Also, if specific indirect taxes/subsidies are intended to correct for externalities, then these should be included.
2. **Monetization of non-market impacts:** the second big step of the economic analysis is to include in the appraisal those project impacts that are relevant for society, but for which a market value is not available.
3. **Inclusion of additional indirect effects (if relevant);**
4. **Discounting of the estimated costs and benefits (Social Discounting):** The discount rate in the economic analysis of investment projects - the social discount rate (SDR) - reflects the social view on how future benefits and costs should be valued against present ones.
5. **Calculation of the economic performance indicators** (economic net present value, economic rate of return and B/C ratio).

-Indicate the economic benefits that were considered (typically increased efficiency of existing services or benefits from new services) as well as the methodology and values used for the quantification of those benefits.

-Indicate economic costs (e.g. environmental impact)

EXPECTED CONTENTS AND SPECIFIC NOTES:

- Briefly refer to the methodology according to which the economic analysis was carried out. Refer to the relevant CBA Guidelines, which in this case are EU guidelines for CBA
- Refer to the same incremental approach used in the case of the financial analysis (scenario with project vs. scenario without project or business-as-usual).

- Indicate how the financial costs were converted into economic costs using conversion factors when necessary and briefly explain how the conversion factors were established.
- Indicate the economic benefits that were considered (typically increased efficiency of existing services or benefits from new services) as well as the methodology and values used for the quantification of those benefits.
- Indicate economic costs (e.g. environmental impact)

**Important Notes:**

- The economic benefits should be consistent with the project objectives.
- Check if National CBA Guidelines establish a standard methodology for the quantification of economic benefits.
- The economic analysis is to be done at shadow (accounting) prices: (i) project's inputs should be valued at their opportunity cost (e.g. opportunity cost of labour, depends on whether the worker was previously employed or not); (ii) the outputs should be valued at consumers' willingness to pay
- Usually, financial values are not to be considered for the economic analysis except in those cases where financial values can be considered as a good proxy for the economic values. Deviations from this rule should be appropriately explained and substantiated.
- Analysis of economic benefits and costs (incl. indirect/external benefits and costs) should be conducted on incremental basis, taking into account any additional benefits and costs that project may bring compared to the situation without the project.
- Economic analysis should be conducted for the time of the investment and of the operation of the project. Conducting analysis only for the period of operation is not correct.

Give details of main economic costs and benefits identified in the analysis together with values assigned to them. Fill the text box. Extend the text box as necessary.

Enter all economic flows identified during the analysis.

Benefit	Unit value (where applicable)	Total value (in euro, discounted)	% of total benefits
...	...	...	...
Cost	Unit value (where applicable)	Total value (in euro, discounted)	% of total costs
...	...	...	...

The benefits arising from bridging the digital divide between rural and urban areas can be many and can vary depending on the National and local context, for example: structure of the rural population,

dominant industries and businesses, strategic economic development objectives of the local authorities and so on. These differences need to be accounted for, when designing economic impact, which is why the same needs to be done on a case by case basis.

Each of the identified benefits needs to be quantified through the use of shadow prices, as only the quantified benefits will be included in the calculation of the economic net present value.

Please have in mind that when the scope of the project are rural areas, the economic benefits arising from a project which main aim is to improve the quality of living and doing business as is the bridging the digital divide, an important economic benefit arises from the reduction of the risk associated *with the population and businesses loss* due to migration and immigration.

The best approach in categorising the benefits is through the application of the stakeholder theory. In the concerned case there are three main stakeholders in any community: (1) the people, (2) the businesses and (3) the government. The benefits thus can be grouped according to each group. For example:

1. Improving the quality of live and work;
2. Improving the business environment; and
3. Improving the quality of governance.

These three categories of benefits are comprised out of many sub-variables which enable their quantification.

1. Improving the quality of live and work in the rural area;

The category in the context of the broadband deployment in rural areas needs to include:

- 1.1. Increasing the number of current households (people) connected to internet;
- 1.2. Increasing the number of population engaged in teleworking;
- 1.3. Increasing the number of people engaged in e-commerce activities.
- 1.4. Increasing the number of population engaged in educational activities online;

The list is not final and can be expanded.

These numbers will indicate whether the public entity will succeed in maintaining and increasing the current level of population in the rural area. The use of shadow prices to account for the benefits from the population should focus on shadow prices which will quantify the impact of the population on several levels. First, it is the direct impact on local taxes, and second is the indirect impact on the local economy which come from the spillovers. Third economic benefit comes from the social benefits which can create substantial social and other savings for the public entity as are for example the reduced crime rates of youth, the opened channel of communication with rural inhabitants

which saves costs associated with frequent visits and similar.... *The socio-economic impact analysis is a creative process.*

As one can see from the list it is relatively easy to convert some of these variables to specific economic benefit, and difficult if not impossible to do the same for others.

## 2. Improving the business environment for current and attracting new businesses

The category in the context of the broadband deployment in rural areas needs to include variables as:

- 2.1. Increasing the number of businesses connected to internet;
- 2.2. Increasing the number of business introducing web pages and simple use of internet in advertising purposes;
- 2.3. Increasing the number of business introducing e-commerce applications;
- 2.4. Increasing the number of online businesses;

The list is not final and can be expanded.

These numbers will indicate whether the public entity will succeed in maintaining and increasing the current number of business in the rural area. The use of shadow prices to account for the benefits from the population should focus on shadow prices which will quantify the impact of the business on several levels. First, it is the direct impact on local taxes, and second is the indirect impact on the local economy which come from the spillovers. Third economic benefit comes from the social benefits which can create substantial social and other savings for the public entity as are for example the reduced crime rates due to increased employment and similar....*The socio-economic impact analysis is a creative process.*

## 3. Improving the quality of governance.

The category in the context of the broadband deployment in rural areas needs to include variables as:

- 3.1. Increasing the number of population with access to internet;
- 3.2. Increasing the number of population using the e-government services;
- 3.3. Increasing the number of population engaged in educational activities online;

The list is not final and can be expanded.

These numbers will indicate whether the public entity will succeed in maintaining and increasing the reach and authority of the state in rural areas. The use of shadow prices to account for the benefits should focus on the state savings arising from the improved internet access of its citizens.

Main indicators of the economic analysis

Each of the identified and quantified variables becomes part of an investment model which quantifies the benefits arising from the project in its life span. The rates need to be calculated and presented in the table to present the actual benefits from the project for the community in question.

Main parameters and indicators	Values
1. Social discount rate (%)	
2. Economic rate of return (%)	
3. Economic net present value (in euro)	
4. Benefit-cost ratio	

#### Employment effects of project

Provide an indication of the number of jobs to be created (expressed in terms of full-time equivalents (FTE)). Please have in mind that the section only covers the direct and indirect employment associated *with the implementation of the project* not the subsequent operations i.e. the impact of the service on the community. The later has already been cover under economic impact.

**Give details of main economic costs and benefits identified in the analysis together with values assigned to them. Fill the text box. Extend the text box as necessary. Sample content**



Programme co-funded by the

Number of jobs directly created: <small>Financing Cooperation Programme</small>	No (FTE) (A)	Average duration of these jobs (months) (B)
1. During implementation phase		
2. During operational phase		

COSTS	%
Administrative and project documentation before the beginning of the construction phase of the operation	9
Costs related to authorisations and permissions to execute the project	2,5
Building works (digging, laying pipes, manholes, antennae poles, etc.)	32
Passive infrastructure execution costs (cabling, splicing, measurements, etc)	23
Cost of acquisition or setting up the spaces for network's primary nodes	11
Cost of materials and passive equipment	2
Active equipment costs	1
Technical supervision of the building phase	5,5
Surveying and recording of the works for public utility cadastre	14
SUM	100

The table above shows the average arrangements for the project costs in building fibre network in Slovenia. The division of these costs between public and private partner depends on which PPP model is chosen. It could also be that not all the costs are divided in the same percentage. Basically it is a habit that long term costs and legal cost are often covered by public partner, and short term and economic costs by private partner.

[NB: indirect jobs created or lost are not sought for public infrastructure investments.]  
In case of permanent jobs, instead of duration in months, type "permanent".

**Identify the main non-quantifiable / non valuable benefits and costs. Fill the text box. Extend the text box as necessary.**

EXPECTED CONTENTS AND SPECIFIC NOTES:

- Briefly indicate if there are any other relevant economic benefits that were not considered in the analysis due to the difficulties in assigning them monetary values.
- In any case, the economic benefits considered should be sufficient to ensure  $ENPV > 0$ , so the purpose non-quantifiable benefits in this section is just to reinforce the conclusion that the project is really worth financing.

### Risk and sensitivity analysis

**Short description of methodology and summary results. Fill the text box. Extend the text box as necessary.**

**Sample content:**

1. Sensitivity analysis: aims to identify the project's critical variables. This is done by letting the project variables vary according to a given percentage change and observing the subsequent variations in both financial and economic performance indicators. Variables should be varied one at a time, while keeping the other parameters constant. The Guide then suggests considering as "critical" those variables for which a 1% variation (positive or negative) gives rise to a corresponding variation of 5% in the NPV's base value. Different criteria can, however, be adopted. Arbitrarily chosen percentage changes are not necessarily consistent with the variables' potential variability. The calculation of the switching values can reveal interesting information, by indicating what percentage change in the variables would make the NPV (economic or financial) equal to zero.

2. Risk analysis: assessing the impact of given percentage changes in a variable on the project's performance indicators does not say anything about the probability with which this change may occur. Risk analysis deals with this. By assigning appropriate probability distributions to the critical variables, probability distributions for the financial and economic performance indicators can be estimated. This enables the analyst to provide interesting statistics on the project's performance indicators: expected values, standard deviation, coefficient of variation, etc.

It should be noted that while it is always possible to do a sensitivity analysis, the same cannot be said for risk analysis. In some cases (e.g. lack of historical data on similar projects) it may prove rather difficult to come up with sensible assumptions on the critical variables' probability distributions. In such cases, a qualitative risk assessment should at least be done to support the results of the sensitivity analysis.

#### EXPECTED CONTENTS AND SPECIFIC NOTES:

- Briefly refer to the purpose of the sensitivity and risk analysis, which is assessing the probability that a project will achieve a satisfactory performance.
- Briefly describe the methodology used for the sensitivity and risk analysis and the different steps established by the CBA Guidelines (results are presented in the following sections)
- Indicate how the results of the risk and sensitivity analysis were taken into account in the design of the project and what are the measures implemented to mitigate the risks (for example, higher contingencies if the project investment costs is a key variable and has a significant impact in FNPV/K and ENPV).

#### Sensitivity analysis

**State the percentage change applied to the variables tested. Fill the text box. Extend the text box as necessary.**

##### **Sample content:**

**Sensitivity analysis** is the study of how the uncertainty in the output of a mathematical model or system (numerical or otherwise) can be apportioned to different sources of uncertainty in its inputs. A related practice is uncertainty analysis, which has a greater focus on uncertainty quantification and propagation of uncertainty. Ideally, uncertainty and sensitivity analysis should be run in tandem.

Sensitivity analysis can be useful for a range of purposes, including:

- Testing the robustness of the results of a model or system in the presence of uncertainty.
- Increased understanding of the relationships between input and output variables in a system or model.
- Uncertainty reduction: identifying model inputs that cause significant uncertainty in the output and should therefore be the focus of attention if the robustness is to be increased (perhaps by further research).
- Searching for errors in the model (by encountering unexpected relationships between inputs and outputs).
- Model simplification – fixing model inputs that have no effect on the output, or identifying and removing redundant parts of the model structure.
- Enhancing communication from modelers to decision makers (e.g. by making recommendations more credible, understandable, compelling or persuasive).
- Finding regions in the space of input factors for which the model output is either maximum or minimum or meets some optimum criterion (see optimization and Monte Carlo filtering).

Taking an example from economics, in any budgeting process there are always variables that are uncertain. Future tax rates, interest rates, inflation rates, headcount, operating expenses and other variables may not be known with great precision. Sensitivity analysis answers the question, "if these variables deviate from expectations, what will the effect be (on the business, model, system, or whatever is being analyzed), and which variables are causing it?"

Present the estimated effect on results of financial and economic performance indexes.

**Enter all percentages rounded to one decimal place. Copy values from the accompanying excel file.**

Variable tested	Financial Rate of Return variation	Financial Net Present Value variation	Economic Rate of Return variation	Economic Net Present Value variation

Notes on calculation of the required indicators:

- The variation of the Financial Rate of Return (FRR/K after Community assistance) is entered in absolute terms and calculated as follows:

$[FRR/K \text{ when variable increases (decreases) } 1\%] - [FRR/K \text{ of base case scenario}]$

- The variation of the Financial Net Present Value (FNPV/K after Community assistance) is entered in relative terms and calculated as follows:

$[FNPV/K \text{ when variable increases (decreases) } 1\%] / [FNPV/K \text{ of base case scenario}] - 1$

- The variation of the Economic Rate of Return (ERR) is entered in absolute terms and calculated as follows:

$[ERR \text{ when variable increases (decreases) } 1\%] - [ERR \text{ of base case scenario}]$

- The variation of the Economic Net Present Value (ENPV) is entered in relative terms and calculated as follows:

$[ENPV \text{ when variable increases (decreases) } 1\%] / [ENPV/K \text{ of base case scenario}] - 1$

**Which variables were identified as critical variables? State which criterion is applied. Fill the text box. Extend the text box as necessary.**

EXPECTED CONTENTS AND SPECIFIC NOTES:

Typically, the variables to consider are: future demand, revenues, investment costs, operation and maintenance costs, replacement costs due to technological development,; and for economic

variables: e.g. investment cost of a specific component; tariffs; bandwidth; conversion factors for the quantification of economic benefits.

Based on the table above, indicate for which of the variables a variation of their value of 1% results in a variation of more than 1 percentage point in the base case FRR/K of ERR or more than 1% in the value of the base case FNPV/K or ENPV.

**Which are the switching values of the critical variables? Fill the text box. Extend the text box as necessary.**

**Sample content:**

Three categories are considered as critical variables:

1. **Price dynamics** parameters:
  - **Rate of inflation- High** elasticity
  - **Change of personnel costs- Intermediate** elasticity
  - **Change of energy prices- Low** elasticity
  - **Change of prices of goods and services- Low** elasticity
  
2. **Demand data** parameters:
  - **Specific consumption- High** elasticity
  - **Rate of demographic growth- Low** elasticity
  - **Volume of traffic- High** elasticity
  
3. **Investment costs** parameters:
  - **Hourly labor construction costs- High** elasticity

Categories 1 and 3 can be shifted to the private partner via turn-key project assignment. Proper guarantees must be assured (bank warranty usually) from the private partner to the public, in case something goes wrong, another private partner can be chosen, and additional costs covered by the warranty.

EXPECTED CONTENTS AND SPECIFIC NOTES:

For each of the key variables identified above, indicate what is the variation (in percentage) required to make the FNPV or ENPV = 0

### Risk analysis

**Describe the probability distribution estimate of the project's financial and economic performance indexes. Provide relevant statistical information (expected values, standard deviation). Fill the text box. Extend the text box as necessary.**

*Sample content:*

*By assigning appropriate probability distribution to the critical variables, probability distribution for the financial and economic performance indicators can be estimated. This enables analyst to provide interesting statistics on the project's performance indicators: expected values, standard deviation, coefficient of variation etc.*

*Quantative Risk Analysys:*

*Having established the probability distributions for the critical variables, it is possible to proceed with the calculation of the probability distribution of the FRR or NPV of the project. For this purpose, the use of the Monte Carlo method is suggested. The method consists of the repeated random extraction of a set of values for the critical variables, taken within the respective defined intervals, and then calculating the performance indices for the project (FRR or NPV) resulting from each set of extracted values. By repeating this procedure for a large enough number of extractions (generally no more than a few hundred) one can obtain a pre-defined convergence of the calculation as the probability distribution of the FRR or NPV.*

**EXPECTED CONTENTS AND SPECIFIC NOTES:**

**Quantitative Risk Analysis:**

(Detailed) risk analysis is a condition for eligibility of the contingencies, see Working document 4. EC Guidance is requesting quantified risk analysis, based on sensitivity analysis: for variables which proved to be critical probability distribution should be established and simulated (Monte Carlo) in order to calculate the expected values of economic and financial performance indicators. Beneficiary is requested to present assumptions (form of probability distribution, applied parameters) and results of risk simulation (probability distribution of NPV: most likely value, % probability for negative result, % probability of economic result being in certain range).

**Qualitative Risk Analysis:**

The risk analysis should also include a qualitative risk analysis which lists the possible reasons, for say, cost increase (i.e. price increases in the case of investment cost, higher demand in the case of operating cost). Possible impacts on the project should be addressed (listing of the main risks with highest probability of occurrence) and mitigation measures provided.

When limited or no information of probability distribution is available a qualitative risk analysis could be accepted. National guidelines should be consulted if qualitative risk analysis is

considered appropriate in a situation of a limited availability of data. In such case, it is recommended to provide reference to the national guidelines and provide explanation why quantitative analysis would not be fully feasible for this type of project.

## ANALYSIS OF THE ENVIRONMENTAL IMPACT

### How does the project:

- (a) contribute to the objective of environmental sustainability (European climate change policy, halting loss of biodiversity, other ...);
- (b) respect the principles of preventive action and that environmental damage should as a priority be rectified at source;
- (c) respect the "polluter pays" principle.

**Fill the text box. Extend the text box as necessary.**

### EXPECTED CONTENTS AND SPECIFIC NOTES:

Give a separate and distinct answer to each point from a) to c). Be concise and creative: seek the answers in the project description but do not repeat paragraphs from the text already inserted in different previous section. Reformulate them to answer strictly to the questions.

For question a): use the related OP (each OP contains references to the sustainable development objectives) and/or Agenda 21 and The Rio Declaration (1992), Europe 2020 Strategy (2010), review of the EU Sustainable development strategy (2006), Communication from the EC on a Digital Agenda for Europe (2010), Communication from the EC on Better Access for rural areas to modern ICT (2009) and Communication from the EC on mobilising Information and Communication Technologies to facilitate the transition to an energy-efficient, low-carbon economy (2009) . Explain how the Project complies with the European policy and legislation in the area of ICT development and contributes to meeting the policies in the area of environmental and sustainable development by (use as applicable):

- enabling resource and energy efficiency and efficient economy;
- supporting green technologies and contribute to the reduction of negative impacts on the environment;

- creating sustainable communities and promoting green education;
- facilitating environmental protection and social cohesion, etc.

Show that the project does not have any long lasting negative impact on the environment, referring to technologies to be employed in execution of the project and resources needed in the operation of the ICT.

For question b):

- Refer to the requirements of the Directive 2009/140/EC on common regulatory framework, access to and interconnection of as well as on authorisation of electronic communications networks and services– monitor any negative effects on the environment and landscape and minimize any such effects.
- Refer to the requirements of the EIA Directive 85/337/EEC (as amended), the Habitats' 92/43/EEC and Birds' 2009/147/EC Directives. Though the project is not directly a subject to the environmental impact assessment (EIA) procedure, there may be a need to carry out screening in order to assess if there is a likelihood of significant negative impact on NATURA 2000 sites. Provide information on the procedure, if applicable. Provide information how the screening for the likelihood of significant negative impact on Natura 2000 sites, protected habitats and species has been or will be carried out (by who and when).

For question c):

- Explain that the project developer is responsible for remediation of any residual environmental damage, if such damage occurs despite mitigation measures applied.

### **Consultation of environmental authorities**

Have the environmental authorities likely to be concerned by the project been consulted by reason of their specific responsibilities?

Yes   X   No  

**If yes, please give name(s) and address(es) and explain that authority's responsibility. Fill the text box. Extend the text box as necessary.**

**EXPECTED CONTENTS AND SPECIFIC NOTES:**

Provide information on formal as well as informal consultation, if any, during EIA procedure, if applicable and in relation to the Natura 2000 screening. Use a tabular format (authority, address, responsibility) in case of many authorities and procedures (if applicable).

Do not insert here information on the consultations with NGOs.

If no, please give reasons: N/A

### Environmental Impact Assessment

**Has development consent already been given to this project?**

Yes     No

**EXPECTED CONTENTS AND SPECIFIC NOTES:**

- The YES box should be ticked only when the development consent (e.g. construction permit) was issued.

- Depending on the national requirements, the project may need more than one development consent (e.g. construction permit). If for the main project component, the development consent was issued until the AF was submitted to the EC, then the Applicant may tick the YES answer.

- The development consent is usually preceded by the issuance of the EIA Decision/ opinion/ statement. Thus, a text mentioning any permits needed to get the development consent may be inserted here. Provide the date(s) of its (their) issuance and the name(s) of the authority(authorities) responsible for its (their) issuance.

**If yes, on which date?**

**DD/MM/YYYY**

Insert the date of the development consent(s) issuance. Information must be correlated with the rest of the document.

**If no, when was the formal request for the development consent introduced?**

**DD/MM/YYYY**

EXPECTED CONTENTS AND SPECIFIC NOTES:

Insert the date when the formal request for the last development consent was or will be introduced.

**By which date is the final decision expected?**

**DD/MM/YYYY**

EXPECTED CONTENTS AND SPECIFIC NOTES:

Insert the date when the last development consent is expected to be issued.

**Specify the competent authority or authorities, which has given or will give the development consent. Fill the text box. Extend the text box as necessary.**

EXPECTED CONTENTS AND SPECIFIC NOTES:

Make distinction between environmental competent authorities and authority/ authorities competent for issuing the development consent.

***APPLICATION OF COUNCIL DIRECTIVE 85/337/EEC ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA)11***

EXPECTED CONTENTS AND SPECIFIC NOTES:

- The EIA Directive 85/337/EC (with amendments) does not contain ICT category of projects which requires screening for or EIA itself.
- However, if EIA procedure is carried out, use a table in order to provide the required information about the EIA stages, decisions, information of the public, public consultation. Such a table can be inserted at the end of section F.3.2 and reference to it will be made in the

answers given to the following questions, upon the case. EIA procedure for ICT projects may be required in case of the likelihood of significant negative impacts have been established on Natura 2000 sites.

**Is the project a class of development covered by:**

Annex I to that Directive (go to question F3.2.2)

Annex II to that Directive (go to question F.3.2.3)

Neither of the two annexes (go to question F.3.3)

**EXPECTED CONTENTS AND SPECIFIC NOTES:**

- Ask the competent environmental protection authority on which Annex of the EIA Directive your project is included (in case you have any doubts how to answer this question)

When covered by Annex I to that Directive, include the following documents:

- (a) the information referred to in Article 9(1) of that Directive;
- (b) the non-technical summary<sup>12</sup> of the Environmental Impact Study carried out for the project;
- (c) information on consultations with environmental authorities, the public concerned and, if applicable, with other Member States.

ICT projects are not in Annex I of the EIA Directive. Leave it blank

When covered by Annex II to that Directive, has an Environmental Impact

**Assessment been carried out for this project?**

**Y e s**

**in which case, include the necessary documents**

**N o**

**in which case, explain the reasons and give the thresholds, criteria or case by case examination carried out to reach the conclusion that the project has no significant environmental effects. Fill the text box. Extend the text box as necessary.**

**EXPECTED CONTENTS AND SPECIFIC NOTES:**

The Applicant should:

- In some countries (e.g. Poland) EIA procedure can be triggered by the likelihood of significant negative impacts on Natura 2000 sites. If such screening took place, include a brief explanation why the screening stage of the EIA procedure according to the national legal provisions was needed.
- attach a copy of the Screening Decision and of any relevant documents which sustain the explanations inserted above; such documents may include, if applicable, the filled in check list described in the EC Methodological guidance([http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/natura\\_2000\\_assess\\_en.pdf](http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/natura_2000_assess_en.pdf)).

APPLICATION OF THE STRATEGIC ENVIRONMENTAL ASSESSMENT DIRECTIVE 2001/42/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL<sup>13</sup> (SEA-Directive)

**Does the project result from a plan or programme falling within the scope of the SEA Directive?**

**No**

**in which case please provide a short explanation. Fill the text box. Extend the text box as necessary.**

**EXPECTED CONTENTS AND SPECIFIC NOTES:**

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Example:

“The project results from the Regional Operational Programme (ROP 2007 – 2013), priority axes X (information society) approved by (... ..) on (... ..). A SEA was carried out and the SEA Report was published in [X year]. The internet link is (.....)”. The competent environmental authority should be consulted in order to answer this section.

Other relevant strategic documents and their SEAs are national and regional development plans and programmes and land use plans where ICT projects are being further elaborated.

Y e s

**in which case, in order to appreciate if wider potential cumulative effects of the project have been addressed, please provide either an internet link to or an electronic copy of the non-technical summary of the Environmental Report carried out for the plan or programme.**

*Assessment of effects on NATURA 2000 Sites*

The applicant should make distinction between the two different situations:

- a screening stage of the assessment of effects on Natura 2000 sites was carried out and the Appropriate Assessment was not deemed as necessary (a screening decision may exist or a Declaration should be requested. See more guidance further),
- an Appropriate assessment was carried out (an EIA decision should exist with conclusions on Natura 2000 assessment).

Depending on which of these two situations was applicable, the Applicant will mark the YES or NO answer.

**Is the project likely to have significant negative effects on sites included or intended to be included in the NATURA 2000 network?**

Y e s

**in which case**

**Please provide a summary of the conclusions of the appropriate assessment carried out according to Article 6(3) of Council Directive 92/43/EEC15. Fill the text box. Extend the text box as necessary.**

**EXPECTED CONTENTS AND SPECIFIC NOTES:**

Depending on the provisions of the national legislation, the report on the Appropriate Assessment as required by the Habitats' Directive may be a separate document attached to the EIA Report, or a separate chapter/sub-chapter included in the EIA Report

The Applicant is required to identify the conclusions of this document and to insert them in a text box in the Application form.

**In case, compensation measures were deemed necessary according to Article 6 (4), please provide a copy of the form "Information on projects likely to have significant negative effect on NATURA 2000 sites, as notified to the Commission (DG Environment) under Directive 92/43/EEC16". Fill the text box. Extend the text box as necessary.**

**EXPECTED CONTENTS AND SPECIFIC NOTES:**

- The Applicant may include a brief description of the compensatory measures in the text box which describes the conclusions of the Appropriate Assessment.
- The Applicant should ask the competent environmental authority to provide a copy of the form "Information on projects likely to have significant negative effect on NATURA 2000 sites, as notified to the Commission (DG Environment) under Directive 92/43/EEC"

No

in which case attach a completed Appendix I declaration filled in by the relevant authority.

EXPECTED CONTENTS AND SPECIFIC NOTES:

Applicant should ask for the Declaration from the competent environmental authority. The Declaration should be based on the standard format provided in the Application form. The Declaration itself should cover the following issues for each Natura 2000 site:

- Name, location (distance to the project boundaries should be clearly indicated on the map);
- Site's conservation objectives (for which the site was included in the Natura 2000 network);
- Information on the appropriate assessment screening procedure carried out (by who, when);
- Conclusions of the screening and justification i.e why the project is not likely to have significant negative effects on sites included or intended to be included in the Natura 2000 network, either individually or in combination with other projects.
- The map attached to the Declaration should be dated stamped by the competent environmental protection authority.

*Additional environmental integration measures*

Does the project envisage, apart from Environmental Impact assessment, any additional environmental integration measures (e.g. environmental audit, environmental management, specific environmental monitoring)?

Yes No

**If yes, specify**

**Fill the text box. Extend the text box as necessary.**

EXPECTED CONTENTS AND SPECIFIC NOTES:

Applicant might refer to Environmental management system, if such was provided by the Project Feasibility or other relevant study, relevant operational programme, etc. Among others, measures identified there may include regeneration and environmental monitoring.

**Cost of measures taken for correcting negative environmental impacts**

**If included in total cost, estimate proportion of cost of measures taken to reduce and/or to compensate for negative environmental impacts**

%

**Explain briefly. Fill the text box. Extend the text box as necessary.**

**EXPECTED CONTENTS AND SPECIFIC NOTES:**

Information provided here should be consistent with the similar ones provided elsewhere in the Application form.

**In case of projects in the areas of water, waste water and solid waste:**

**Explain whether the project is consistent with a sectoral/integrated plan and programme associated with the implementation of Community policy or legislation<sup>17</sup> in those areas. Fill the text box. Extend the text box as necessary.**



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#### **PPP4Broadband treatment based on ESA95**

##### *PPP balance sheet based on ESA95*

Each specific PPP4Broadband has to have fix allocation of the risks to the balance sheets of the Private or Public actors, where then will be included values based on specific PPP Project

##### *Template PPP balance sheet based on ESA95*

A sample balance sheet for Eurostat for PPP project is included in the excel worksheet and will be copied here.

## PPP project tender preparation

### PPP4Broadband procurement model

Procurement definition: Each PPP4B Model has to be defined by usage of 1 single procurement procedure (from 4 possible + concession), Concession, open, restricted, negotiated and competitive dialogue. During WP3 we will discuss all of them, to shortlist the most appropriate in the following phases of the project.

Definition of award criteria (including scoring and ranking) respectively definition of bidding rules for discussion with bidders during the bidding process for Negotiated Procedure and Competitive Dialogue will be defined in WP3 during group work.

### PPP4Broadband detailed project time plane

Draft PPP project time plane is included in the excel worksheet, to be developed in group work. Template for this section will be in fact developed during the national customisation of the proposed PPP4B Models. Based on selected procurement method and national legislation detailed time plan of PPP project procurement will be developed by each partner. Project time plane could vary from country to country, but on other hand can be the same in one country for more PPP4Broadband models. End date for plan is the date of signature of Contract between winning bidder and procurer.

### Project timetable

Give below the timetable for the development of the overall project.

**Where the application concerns a project stage, clearly indicate in the table the elements of the overall project for which assistance is being sought by this application:**

	Start date (A)	Completion date (B)
1. Feasibility studies:	dd/mm/yyyy	dd/mm/yyyy
2. Cost-benefit analysis (including financial analysis):	dd/mm/yyyy	dd/mm/yyyy
3. Environmental impact assessment:	dd/mm/yyyy	dd/mm/yyyy
4. Design studies:	dd/mm/yyyy	dd/mm/yyyy
5. Preparation of Tender documentation:	dd/mm/yyyy	dd/mm/yyyy
6. Expected launch of tender procedure(s)*	dd/mm/yyyy	
7. Land acquisition:	dd/mm/yyyy	dd/mm/yyyy

8. Construction phase / contract:	dd/mm/yyyy	dd/mm/yyyy
9. Operational phase:	dd/mm/yyyy	

\* Specify for each tender

Please attach a summary schedule of the main categories of works (i.e., a Gantt chart, where available).

### Project maturity

Describe the project timetable in terms of the technical and financial progress and current maturity of the project under the following headings:

**Technical (feasibility studies, etc.). Fill the text box. Extend the text box as necessary.**

#### EXPECTED CONTENTS AND SPECIFIC NOTES:

This section should provide information on:

- Technical maturity by listing all the technical studies and designs that have been undertaken for the specific project;
- Level of design detail and completion dates;
- Preparation of tender documents.

**Administrative (authorisations, EIA, land purchase, invitations to tender, etc.). Fill the text box. Extend the text box as necessary.**

**EXPECTED CONTENTS AND SPECIFIC NOTES:**

Administrative maturity should be presented by listing all of the authorizations (e.g. development consents, construction permits) that need to be obtained and actual or expected date when the authorizations were or will be obtained.

Refer to the status of the following ( as applicable in accordance with the national legislation): EIA Decision/ Opinion/ Statement / Natura 2000 Declaration, localization decisions, planning permission(s), invitations to tender, construction permit(s), local decisions as regards project approval, project implementation structure, etc.; if the case, indicate any updates of these authorisations, approvals, etc.; where certain authorisations are not issued yet, please indicate an estimated timeframe; insert information consistent with the one given in section F.

Concerning tender procedures it is recommended to explain the current status and possible delays (e.g. appeals, possible re-tendering, etc.). Form of contract should be indicated.

**Financial (commitment decisions in respect of national public expenditure, loans requested or granted, etc. - give references). Fill the text box. Extend the text box as necessary.**

**EXPECTED CONTENTS AND SPECIFIC NOTES:**

Refer to any relevant decisions on national co-financing indicating the various financing sources and their shares. If possible a reference to the national budget or other long-term planning and financing documents should be provided. This should cover the implementation phase as well as the operational phase of the project (i.e funding of operations).

**If the project has already started, indicate the current state of works. Fill the text box. Extend the text box as necessary.**

**EXPECTED CONTENTS AND SPECIFIC NOTES:**

In case the project already started, indicate which works were already done and a “percent complete” should be provided. If project is implemented through more than 1 contract, information should be provided for each contract.

## PPP4Broadband draft contract

PPP project draft contract template will be developed by Working Groups in WP3, containing at least the following:

- Project definition objectives and performances, rights, obligations of contracting parties (taken from the project definition chapter)
- Risk allocation between parties (taken from Risk assessment and allocation chapter)
- Service level agreement part (taken from Technical definition chapter)
- Payment mechanisms; including penalties or bonuses (taken from Affordability chapter)

Template will be further strongly customized by each Project partner during the National Customisation of PPP4Broadband Models in WP4 to follow national legislation in (at least) following aspects:

- Modification of previous section ( if necessary based on national legislation)
- Definition of: procedure for modification of PPP service, securities and insurances, terms of contract, disputes resolving, termination conditions
- Additional parts requested by national legislation

## PPP procurement process

### Procurement notice & Shortlisting

Procurement notice developed by Working Groups will be basic content definition following EU directive for selected procurement process and can be the same for various PPP4B models.

Procurement notice will be further developed during National Customisation by each PP to fulfil national legislative ( eventually broadband market) specifics

The content for the procurement notice is developed in Chapter B.5.

Procurement notice publishable in national procurement journals + OJEU will be prepared in later phases.

### Technical qualification criteria

Evaluation criteria and calculation of scoring

- *Evaluation criteria for pass/fail evaluation*
- *Methodology and matrix for calculation of scoring of received proposals*

(Pre-qualification) template / questionnaire

*Recommended technical qualification criteria which has to been fulfilled by shortlisted bidders to secure that they have capacities to implement PPP project is part of WP3.*

The content is developed in B.1.2.2. Chapter.

### Shortlisting

*Scoring part of template will developed in B.2.chapter (includes technical and business model related issues). Some requested pre-qualification criteria (generally: business, financial capacities, HR capacities and eventually legal basis) will be added in later phases.*

Shortlist of bidders for the invitation for the tender will be prepared in later phases.

Final pre-qualification report for PPP project will be prepared in later phases.

### Procurement process

To ensure that the cost of public service is effectively minimised it is necessary not only to avoid overcompensation, but also to entrust the service to the most efficient operator being the latter a necessary complement to the former condition. Therefore, the SGEI compensation should in principle be granted through an open, transparent, non-discriminatory tender requiring all candidate operators to define in a transparent manner the profitable and non-profitable areas, estimate the expected revenues and request the corresponding amount of compensation that they consider strictly necessary, avoiding any risk of overcompensation. A tender organised under such conditions should guarantee that the fourth condition set out in Altmark is fulfilled. However, according to the

Altmark judgment itself, even if “the undertaking which is to discharge public service obligations, in a specific case, is not chosen pursuant to a public procurement procedure which would allow for the selection of the tenderer capable of providing those services at the least cost to the community” the service will still be considered to comply with the fourth Altmark condition if, “the level of compensation [is] determined on the basis of an analysis of the costs which a typical undertaking, well run and adequately provided with means ...so as to be able to meet the necessary public service requirements, would have incurred in discharging those obligations, taking into account the relevant receipts and a reasonable profit for discharging the obligations”.

In the case of broadband there are many variables that qualify a project: quality of service, aid amount, aid intensity, geographical coverage, chosen technical means, price to users, etc.

According to the ECJ, when the chosen procedure is not based only on the lowest price, but on multiple awarding criteria (‘the most economically advantageous tender’) those criteria must be ‘linked to the subject-matter of the contract, do not confer an unrestricted freedom of choice on the authority,... expressly mentioned in the contract documents or the tender notice, and comply with all the fundamental principles of Community law, in particular the principle of non-discrimination’.<sup>31</sup>

If aid is to be excluded, the procedure must offer sufficient guarantees that the choice reflects the ‘best value for money’ for the tendering public authority. In Pyrénées-Atlantiques, the Commission accepted that the fourth Altmark criterion was satisfied because the selection was not mainly based on qualitative criteria, but was made on quantifiable elements and the choice between the two final offers reflected the lowest amount and intensity of aid.

The procurement process and the necessary documentation is relative to national legislation. Please refer to MA and national experts.



## Tender documentation

Tender documentation is necessary to provide:

- Basic tender information for bidders including instruction for bidder about bid preparation, submission and requested content about final bidding proposal is PPP and public
- Clear definition of evaluation criteria

Tender documentation is national specific, please refer to MA and national experts.

## SOURCES

1. [http://ec.europa.eu/regional\\_policy/sources/docoffic/2007/working/wd4\\_cost\\_en.pdf](http://ec.europa.eu/regional_policy/sources/docoffic/2007/working/wd4_cost_en.pdf)  
Guidance on the methodology for carrying out cost-benefit analysis WD4, page 5-11
2. [http://ec.europa.eu/regional\\_policy/sources/docgener/presenta/broadband2011/broadband2011\\_en.pdf](http://ec.europa.eu/regional_policy/sources/docgener/presenta/broadband2011/broadband2011_en.pdf)  
Guide to broadband investment 2011, page 42-47
3. <https://www.econstor.eu/dspace/bitstream/10419/56429/1/630589232.pdf>  
Public-Private Partnership in Infrastructure Development Case Studies from Asia and Europe; page9-11.
4. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2013:025:0001:0026:EN:PDF>  
EU Guidelines for the application of State aid rules in relation to the rapid deployment of broadband networks (2013/C 25/01)
5. [www.eib.org/epec/resources/guide-to-guidance-en.pdf](http://www.eib.org/epec/resources/guide-to-guidance-en.pdf)  
The Guide to Guidance; How to Prepare, Procure and Deliver PPP Projects (EIB, EPEC)
6. [www.jaspers-europa-info.org/images/stories/food/KEW\\_WORKINGPAPERS/Major\\_Projects\\_Application\\_Form\\_Annex\\_XXI\\_Broadband.pdf](http://www.jaspers-europa-info.org/images/stories/food/KEW_WORKINGPAPERS/Major_Projects_Application_Form_Annex_XXI_Broadband.pdf)  
Guide for major projects (broadband) - Application Form / Annexe XXI, JASPERS Programme.
7. [http://www.jaspers-europa-info.org/images/stories/food/KEW\\_WORKINGPAPERS/6.\\_Broadband\\_Guidelines.pdf](http://www.jaspers-europa-info.org/images/stories/food/KEW_WORKINGPAPERS/6._Broadband_Guidelines.pdf)  
State aid in broadband infrastructures projects
8. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2013:025:0001:0026:EN:PDF>  
EU Guidelines for the application of State aid rules in relation to the rapid deployment of broadband networks