July 2016

ETNO Contribution to the BEREC Draft Report on "Challenges and Drivers of NGA Rollout and Infrastructure Competition" – BoR (16) 96

Introduction

ETNO has read with interest the BEREC Draft Report on "Challenges and Drivers of NGA Rollout and Infrastructure Competition". We welcome the opportunity to provide our comments to the document.

The draft report aims at analysing the drivers of NGA deployment across Europe. Identifying and assessing the main factors behind NGA rollout is very important. Massive EU-wide deployment of NGA networks should be a key policy goal for EU and national policy-makers and should be underpinned by sound analysis.

To achieve this policy goal, it is worth recalling that the huge investments required will have to mainly come from the private sector. Only in order to reach the Digital Agenda Target for 100 Mbps take-up by 2020, it is estimated that around 100 billion euros of additional investments will need to be put in place between now and 2020[1].

Of course, the investment required to achieve the desirable goals of a "Gigabit Society" and a 5G-Europe, as recently outlined by Commissioner Oettinger[2], would be much higher.

As the European Commission is about to reform its regulatory framework for electronic communications, we need to ask ourselves two questions: what are the main factors affecting NGA rollout? And in the light of these, how can the EU design a policy environment which favors massive NGA deployment, in the interest of European end-users and European competitiveness?

Our comments to this draft report are guided by these two overarching questions.

1. The key drivers of NGA deployment: regulation does matter

In the draft report, BEREC identifies three main factors driving NGA deployment across Europe: the degree of infrastructure competition, especially from cable operators; demand-side factors (i.e. demand for services in need of high bandwidths and a high willingness to pay a premium for NGA-based access); and supply-side factors.

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[1] See The Boston Consulting Group, "Five Priorities for Achieving Europe's Digital Single Market" (https://etno.eu/datas/publications/studies/FINAL_BCG-Five-Priorities-Europes-Digital-Single-Market-Oct-2015.pdf). The European Commission pointed out a similar figure in its Roadmap on the "Evaluation and Reform of the Regulatory Framework for Electronic Communications Networks and Services"(http://ec.europa.eu/smart-regulation/roadmaps/docs/2015_cnect_007_evaluation__elec_communication_networks_en.pdf).

[2] See here: https://ec.europa.eu/commission/2014-2019/oettinger/announcements/keynote-mobile-360-europe-event-brussels_de

Moreover, BEREC notes that such factors are "largely or completely exogenous to regulatory interventions by NRAs" and to "sector-specific regulation" (pp. 5 and 29).

ETNO concurs that the factors outlined by BEREC are very important in determining the prospect for NGA development in given geographies. NGA rollout and the related economic and societal benefits are mainly driven by market actors, their investment and their innovation efforts to meet end-users' demand. More detailed comments on these factors are provided in section 2 of this paper.

However, we believe that regulation also plays a key role in influencing these variables and, more broadly, in shaping investment incentives in a heavily regulated sector like the telecoms industry. In section 3, we provide specific reasoning supporting this argument.

2. The drivers of NGA rollout identified by BEREC

2.1. Infrastructure competition

In section 2.1 of the draft report, BEREC singles out "infrastructure competition from cable and from independent FTTP operators" as a key driver of NGA deployment. This kind of infrastructure competition is considered "exogenous in the sense that it is not or to a very limited extent induced by (current) regulation" (p. 10).

ETNO agrees that the emergence of infrastructure competition in specific markets (at national or sub-national level) has been an important driver of NGA rollout, as also shown by the Figure 2 of the draft report (p. 8). This has been mainly due to the emergence of cable operators. In fact, over the past years, in many geographies, cable operators have been rising as strong and largely unregulated competitors in both fixed broadband and, increasingly, wireless broadband markets.

Plum Consulting has estimated "that infrastructure-based cable operators have contributed virtually all of the growth in the challengers' market share since 2008" and that "in the geographic areas where they have a footprint, cable operators have increased their share of the fixed broadband market from around 30% in 2008 to around 40% in 2014"[3].

Now, while we can consider that infrastructure competition from cable operators has been exogenous to sector-specific regulation, on the other hand it has been favored by regulation in the sense that such operators are mostly unregulated. Consequently they do not support the constraints and costs of regulated operators and have not had to rely on access to incumbents' network to offer broadband access. Therefore, it would be worth considering whether absence of regulation has been an important factor explaining their ability to gain important market shares in NGA markets.

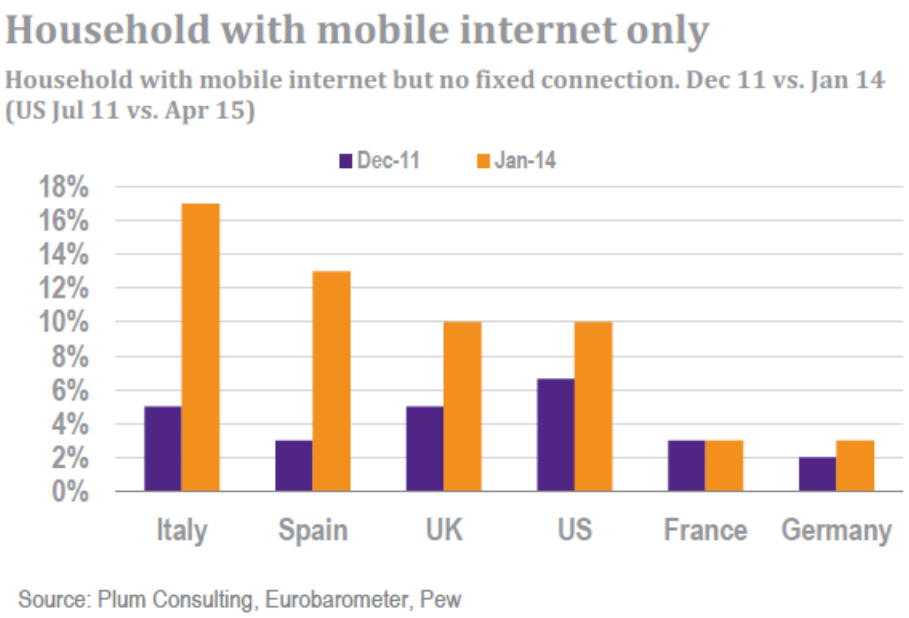
Another interesting observation of this section refers to the tendency of incumbent operators to respond to the rollout of DOCSIS-enabled broadband with deployment of FTTC/VDSL (p. 11).

[3] Plum Consulting, "Fostering Investment and Competition in the Broadband Access Markets of Europe", February 2016, p. 12. Available at https://etno.eu/datas/publications/studies/PlumStudy2016.pdf

These technologies ensure a more rapid and efficient upgrade than the rollout of FTTP in order to respond to competition from cable[4].

Finally, we would also like to refer to a point made on competition between mobile and fixed access services. The draft report states that "mobile broadband is usually not competing directly against fixed broadband deployment" and that "in most Member States users consider mobile broadband a complement, not a substitute for fixed broadband access" (p. 12). Nevertheless, to a certain extent in several countries and across specific users groups at least, mobile broadband is a growing competitive constraint to fixed broadband access, as suggested by the following data from Plum Consulting[5].

Figure 2-2



Source: Plum Consulting, Eurobarometer, Pew

Interestingly, the draft report also notes that "competition from mobile has also led to a relatively low price level for entry products. This, together with a relatively low willingness to pay for higher bandwidths make in particular FTTP investments by the incumbent and alternative operators more difficult" (p.12).

2.2. Demand-side factors

We fully concur with the draft report when it underlines the key role of demand-side factors in driving NGA take-up and deployment. As stated in the document, "end user demand for high capacity broadband connections and a willingness to pay the associated premium for the higher

[4] Introduction of vectoring enables very high-speed broadband access from FTTC over copper comparable with DOCSIS speed on coax introduced by cable companies. This innovation on open active access layer is both beneficial to the incumbent as well as to alternative operators, as higher speeds are necessary for all ISPs on the incumbent open active access network (WBA/VULA) to compete against cable.

[5] Plum Consulting, Ibid., p. 11.

capacity are important demand side factors" (p. 12). This is reported in several EU Member States. Of course, this has an important effect "on the business case of operators when rollout decisions are being evaluated" (including the pace and the technology mix of the rollout).

We welcome the recognition by BEREC that low prices and low willingness to pay for very high bandwidths make in particular FTTP investments more difficult. This point is extremely important, and should lead to two policy conclusions:

a) Demand side policies need to go hand in hand with supply side policies in order to optimise the impact of broadband promotion policies. Some demand side policies appear to be relevant to improve the business case of network rollout to encourage broadband availability, while other demand side policies are relevant to increasing user take-up, in cases where network availability exists[6].

b) Policymakers at the EU and national level should always factor in the end-users' willingness to pay when setting policy targets related to broadband performance (such as specific speeds). If the assessment of the potential demand does not factor in end-users' willingness to pay, then the risk is to set very challenging broadband targets which market forces will not be able to reach due to absence of demand.

Technology neutrality is an important principle to respect, as it allows operators to choose the most efficient technologies to cater the demand of their end-users, also considering their willingness to pay. In this respect, we do not share BEREC's view that "(full coverage by) FTTP is the desired goal in the long run" (p. 31). Broadband targets have to be set based on speed and quality and reflecting the willingness to pay of final customers and not based on the availability of specific technologies.
Finally, also for this section, we highlight that regulation can indeed play a role in increasing the willingness to pay an NGA premium by not lowering prices on the legacy networks (i.e. copper LLU price). This contrasts one of the main arguments of the draft report, according to which regulation does not have a prominent impact on investment incentives.

2.3. Supply-side factors

Concerning the supply-side factors outlined in the draft report, we concur that they can have an important influence on NGA deployment and on the adoption of the most efficient technologies by the operators. **Population density and urbanisation** are certainly important variables to consider, as clearly outlined especially on p. 18.

Network-related factors
With regard to network-related factors, and particularly the **availability of high quality ducts**, we concur that they can facilitate NGA deployment by lowering rollout costs. In this respect, we believe that in the future, competition will likely be more based on infrastructure than today, due to the availability of ducts of operators and other utilities, in light of the implementation of the

[6] See in particular here: https://ec.europa.eu/futurium/en/content/subsidising-next-generation-infrastructures-consumer-side-or-supply-side. François Jeanjean demonstrates that subsidising demand is more efficient, in welfare terms, than subsidising infrastructure as long as: consumers' demand for ultrafast broadband remains sufficiently elastic; and the decrease in costs is sufficiently dynamic to allow private operators to rapidly rollout infrastructure without subsidies.

Cost-Reduction Directive (2014/61/EU). This point is also recognised at p. 22 of the draft report (subsection 2.3.4, legislative factors).

Another network-related factor is the **quality of the copper network** (p.19). Here, the draft report rightly recognises that, when the quality of the copper network is high, "FTTC deployment can be realised much quicker" than other technologies and that "this reduces time to market which is also an important factor in competition for high bandwidths, in particular if there is infrastructure-based competition".

Retail prices

As the draft report acknowledges, retail prices have a key influence on investment incentives (p. 21). Furthermore, in section 2.2, the document affirms that the premium retail price in respect to the legacy retail price is positively correlated with NGA rollout.

For this reason, we do not agree with the conclusion drawn at p. 22, according to which "correlation between prices and NGA rollout is rather weak". It is quite surprising to see this conclusion and then read, in the draft report, the following considerations, which appear to show the opposite:

- "In the case of NGA-based active wholesale products, lower access prices will ceteris paribus lead to lower returns on NGA investments for the incumbent operator." (p. 30);
- "Therefore, if cost-orientation is imposed, in order not to distort the make-or-buy decision of alternative operators and incentivise investment by all market participants, the rate-of-return must be risk-adequate and the access price needs to be reflective of the efficient costs" (p. 33);
- "At present, where the willingness to pay a premium for NGA bandwidths at the retail level is low, lowering the price for copper-products might further impede migration from copper-based to NGA-based products. Furthermore, a low copper access price may incentivise alternative operators to use copper based services and to not invest in NGA infrastructure" (p. 31).

These considerations illustrate the strong relation between price, investment and rollout.

3. NGA Rollout and Regulation

Contrary to what is stated in the draft report, ETNO and its members strongly believe that regulation, and particularly sector-specific access regulation, can have a strong impact on investment incentives.

The draft report tends to underestimate the impact of regulation on NGA deployment. While the various national outcomes depend on a series of factors, regulation has a key influence by designing entry layers and the prices for those layers.

SMP regulation has a clear impact on make/buy decisions, and on the value of the infrastructure in general. This is acknowledged by the draft report when it states: "Therefore, if cost-orientation is imposed, in order not to distort the make-or-buy decision of alternative operator and incentivise investment by all market participants, the rate-of-return must be risk-adequate and the access price needs to be reflective of the efficient costs" (p. 31).

The substantial work of several NRAs on ducts access, for example, has had important market impact on the way fibre has been deployed in several countries.

Another concrete example of the impact of regulation on investment is the fact that in some countries the lack of regulatory certainty and predictability and the "wait-and-see" approach vis-à-vis vectoring have significantly delayed and/or hampered operators' investments and innovation, with negative effects on the availability of high-bandwidth services and, ultimately, on final customers' welfare.

In the subsections that follow, we would like to specifically comment on some arguments made by the draft report.

a) The importance of local factors and of dynamic considerations

ETNO fully supports the argument made in several parts of the document, according to which access is and remains a local issue and regulatory decisions should be mainly taken at the local level.

ETNO also supports the call for NRAs to be "more mindful of dynamic considerations" when looking at how to promote consumer welfare in an NGA environment. We fully agree with the draft report when it states that "long-term investment decisions for the rollout of new high-capacity networks need consistent and reliable conditions set out by the regulators, fostering competition that best unleashes the full potential of market-driven infrastructure rollout" (p. 29).

In fact, we believe that this statement clearly shows the importance of appropriate, simple and forward-looking regulation in order to stimulate investment incentives. Regulatory decisions should always look at dynamic efficiencies and at their prospective impact on investment and innovation.

With a view to the review of the EU telecoms framework, we note that the current framework has instead privileged a service-based form of competition with a focus on static efficiency, over a more dynamic and sustainable one.

Promotion of entry in already existing networks, based on the Ladder of Investment (LoI) theory and on its strong emphasis on price competition, has taken the precedence over more pro-investment and pro-innovation forms of competition (e.g. infrastructure-based competition).

Regulation, therefore, is a factor which could facilitate or hamper the transition towards infrastructure competition and consequently NGA deployment.

b) No extension of regulation

While the draft report states that it does not aim to provide policy recommendations, at p. 29 it seems to be implying that symmetric access regulation should be imposed in the presence of competition between infrastructures[7].

[7] The draft report states the following: "Where NGA rollout has taken place, it is not necessarily the (legacy network) incumbent any more owning those networks. In that case, NRAs – in addition to SMP regulation – need to deal with questions such as (symmetric) access regulation and have to set common rules for operators to foster investment and competition".

With this regard, we would like to reiterate our concern and warn against the extension of the scope of regulatory intervention to situations characterised by the absence of single/joint SMP, as BEREC has proposed with the concept of "tight oligopolies".

Introducing a lower threshold for regulatory intervention would go against the principle of regulatory certainty and would send a wrong signal to investors. Market structure should not be by itself a trigger for regulation.

However, ETNO supports BEREC's conclusion that "geographically differentiated remedies may have to be considered" – in ETNO's opinion much more strongly than has so far been the case – "since the NGA footprint may not be uniform within a country" (p. 29). In fact, because of the high costs involved, FTTP networks are rolled out on a local, or at most, regional level – calling for a more regionally differentiated approach to SMP regulation. Only this will ensure "common rules for operators to foster investments and competition", as claimed by BEREC (p. 29).

Moreover, where the incumbent does not own the NGA network, SMP regulation on the incumbent has to be automatically removed. In particular, once NGA networks are deployed in some geographic areas by a publicly owned company, regulation needs to be reviewed to reflect different competitive conditions across the national territory.

Finally, a more dynamic approach than market analysis procedure has to be adopted in order to deregulate geographic areas in a given Member State once infrastructure competition arises and/or in presence of wholesale commercial agreements. NRAs have to better and more rapidly address regulatory challenges arising from changing competitive conditions, otherwise competition risks being distorted and investments hampered.

c) Pricing of access remedies

On p. 30, the draft report underlines that "the incumbent's as well as alternative operators' investment incentives are determined to a large degree by the pricing of the (…) access remedies".

This statement provides a clear example of the link between regulation and investment incentives, as the pricing of access remedies is in most cases regulated.

With regard to section 3.1 of the draft report, we welcome the argument according to which lowering the prices for copper products might further impede migration from copper to NGA (p. 31).

The last sentence of the section states that "a low copper access price *may* incentivise alternative operators to use copper based services and not to invest in NGA infrastructure". We believe that this is not only a possibility, but rather a fact.

Finally, with regard to pricing in an NGA environment, we believe that the obligation of cost orientation has particularly adverse effects on incentives to undertake risky investments in high-speed connectivity and is no longer proportionate in today's much more dynamic market environment.

With a view to the review of the telecoms framework, we believe that the revised rules should limit price regulation to a test of economic replicability by national regulators, taking into account investment risks and any risk-sharing arrangements[8].

To this end, section 3.1 of the BEREC's report should mention the positive effects of NGA wholesale price flexibility on the promotion of NGA investments, as envisaged by the European Commission in the Recommendation 2013/466/EU on consistent non-discrimination obligations and costing methodologies.

d) Technological neutrality

We welcome the reinforcement of the principle of technology neutrality and the recognition that national and historical circumstances have an impact on NGA deployment. Different technologies may suit better varying conditions in specific Member States (this is clearly mentioned on p. 37).

ETNO believes that operators should be free to use the most efficient technologies to deliver NGA. In this respect, it would be highly desirable that the report underline that regulation should be neutral, and should not have an influence on business and technology decisions, by setting incentives or disincentives.

Finally, we would like to note that the principle of technological neutrality should apply also to public funding initiatives and state aid.

e) The role of the availability of ducts (Scenario 1, p. 33)

On p. 33, the report mentions some countries as positive examples of the application of the Ladder of Investment (FR, PT, ES). While it is true that in these countries access seekers have gained scale due to copper LLU, the key factor behind the positive outcome in terms of fibre deployment has been the absence of a regulated LoI over fibre.

Absence of the LoI has induced players to focus on network deployment up to the building/terminating segment. If there had been a LoI with several layers of wholesale products over fibre, the result would have been different.

Furthermore, in this part of the document, the draft report misses a reference to the co-investment and risk-sharing agreements reached in these countries on a commercial basis.

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[8] A report by Charles River Associates for ETNO provides useful indications in this respect: https://www.etno.eu/datas/publications/studies/FinalCRAreport_18032015.pdf

Remarks on the case studies

CROATIA

The report makes reference to the fact that "since the utilization of fibre infrastructure was very low, HT stopped with the deployment in 2010" (p. 52). However, this was not the only reason for HT to stop the investments in fibre. In fact, the National Regulatory Authority imposed strict technical conditions for the construction of FTTH networks (e.g. prohibiting future use of spliced FTTH model, which was applied by HT until then and which was more financially efficient).

According to these rules, any new FTTH network had to be built according to an open network model and relying on a P2P FTTH technology in the access part. This would significantly increase the costs of FTTH deployment and impacted HT's investment plans, resulting in a suspension of future investments. The fact that not only low utilization but also regulatory decisions had an impact in stopping fibre deployment in Croatia needs to be included in the last paragraph of page 52 of report.

FRANCE

When the draft report states that "The investment by alternative operators allowed for significant price and service innovation to the benefits of French consumer" (p. 65), it would be fair to add "in addition to the investments made by the incumbent operator to deploy ADSL on 100% of the French territory". One should not forget that investing alternative operators are able to do so also because of the previous investment by the incumbent.

GERMANY

The data on FTTB/H connections by Deutsche Telekom is not accurate (p. 67) and should be corrected. Where the report mentions "30.000 households can be reached" it should be changed to "over 500.000 households can be reached". Against this background, the reference on page 68 that up to date FTTB/H connections have been almost solely deployed by smaller alternative operators (2m homes passed), also needs to be revised.

ITALY

The draft report states that "regulatory measures, ensuring passive access (to ducts and dark fibre in all the sections of the access network, including access to cabinets for co-location) and active access (VULA and bitstream) to the incumbent NGA infrastructures, have encouraged alternative operators' investments. All access services' prices are cost oriented" (p. 81).

We agree that the regulatory approach has to take into account national specificities, but we deem that NRAs have to follow the principle of proportionality, as stated in the current EU regulatory framework, and remove ex-ante access regulation in favour of ex-post, where competition arises at national or geographical level.

The imposition of the full set of remedies, without any geographic differentiation or price flexibility, is far from being a regulatory approach promoting efficient NGA investments.

It is also worth noting that AGCom's approach on vectoring is significantly hampering operators' ability to reach 2020 DAE broadband targets without state aid. Indeed, vectoring enables to deliver high bandwidth at much lower costs than the ones needed to deploy FTTP networks and planned in the UBB Italian plan (which requires EU public funds).

In addition, the UBB plan notified by the Italian government to the European Commission establishes more challenging NGA coverage objectives than the DAE ones and provides for a direct public intervention to develop NGA networks (FTTP) which risks crowding out private investments.

We welcome that BEREC recognises that thanks to Layer 2 WAP OLOs have the possibility to take advantage of the deployment by the incumbent operators of the VDSL Vectoring (and G.fast) technology in terms of higher bandwidths on the copper access lines[9] in the scenario 3.

We deem that this benefit overcomes the possible alleged drawback of lower flexibility for alternative operators (altnets) in respect to the SLU/LLU.

We also agree that in the scenario 4, "The main regulatory challenge (…) is to find a suitable solution for the deployment of VDSL Vectoring" (p. 36).

However, we deem that a clear distinction has to be made between the German and the Italian case, since the regulatory approaches taken by the NRAs are rather different, even if the scenario is similar.

In the Italian case, the NRA (AGCom) has decided to promote investments in FTTC networks of both the incumbent and alternative operators, but the approach taken as regards vectoring has *de facto* blocked any vectoring deployment. Indeed, as rightly indicated by BEREC[10], AGCom imposed (in 2013 and reconfirmed in the 2015 market analysis Decision) the adoption of the multi-operator vectoring (MOV), but this architecture is currently not available since it is not yet standardised (ITU-T decided not to discuss the issue in February 2016) and no vendor is developing the technical specifications sent by AGCom last year.

AGCom has not taken an alternative effective regulatory solution that does not unnecessarily delay network upgrades, such as the ones adopted in other EU countries (besides DE, AT, BE, DK, IE, NL and UK), as also requested by the European Commission in its comment letter on cases IT/2015/1777-78-79.

[9] See p. 35 of the draft report: "with FTTC rollout of the incumbent operator, the main advantage of active remedies is that the incumbent operator can realise high bandwidths in his network e.g. with VDSL Vectoring or G.fast. While alternative operators can no longer use LLU and need to migrate to active remedies, this enables the incumbent's investments in FTTC and technologies which increase speeds on the (remaining) copper access line." And p. 36: "active remedies give alternative operators access to high bandwidths which they could not offer based on copper local loop unbundling at the CO. The remedy therefore aims to promote service and price competition for NGA bandwidths."

[10] See pages 36-37 and footnote 28 of the draft report.

THE NETHERLANDS

This case study gives a rather one-sided overview of vectoring/VULA in the Netherlands. In the draft report, BEREC indicates that ACM has given its approval for its introduction, which is correct, but ignores the fact that KPN has first made voluntary agreements with market parties. The introduction of vectoring is important for both KPN and access seekers to remain competitive with cable. In the opinion of KPN, especially the last paragraph which states that VULA mainly benefits KPN and that "traditional access seekers" must invest, is therefore unbalanced if not incorrect.

In rural and business areas we see competition from alternative passive access providers such as Ziggo (cable) and CIF (fiber). As regard their rollout they do not have the burden from regulation such as a 2 months' notice period, reference offer and price squeeze obligations. Not bothered by obligations, they can act much more rapidly, acquire customers directly with rollout and charge additional fees to end-users to cover extensive roll-out costs. The summary does not address the fact that the current ACM regulation prohibits KPN to behave as a vertically integrated company in competition with the vertically integrated Ziggo. Due to regulation KPN can less efficiently respond to customer demand and is limited in its time to market.

POLAND

The draft report describes the Polish state aid programme aimed at investing in NGA networks using EU funds, as follows:

"Under the financial perspective 2014-2020, Poland will receive approximately EUR 2 billion for digital foundations for the national development (this will include common access to high-speed internet, e-government and open government, digital competences of the society and technical assistance). Funding will be carried out mainly via a dedicated Operational Programme Digital Poland. The intended intervention regarding broadband investment will focus on white areas where the networks will be sustainable, taking into account take-up potential. The programme will apply the NGA definition in the NGA Recommendation and will build on the premise of technological neutrality, where the requirement of 'guaranteed' 30 Mbps speed will refer to 'functional' best effort speed, thus allowing for grants to advanced mobile solutions" (p. 101).

There are some inaccuracies in the description of the programme:

- EU funding in NGA network will be carried out only through a dedicated "Operational Programme Digital Poland" (OPDP);
- The programme will apply the NGA definition based on the GBER Regulation instead of the NGA Recommendation definition. There is an important difference between the two definitions. The NGA Recommendation defines NGA "Next generation access (NGA) networks" (NGAs) as wired access networks, whereas the GBER Regulation includes "certain advanced wireless access networks capable of delivering reliable high-speeds per subscriber".
- In the first contest of OPDP, technical parameters were defined for NGA networks by the NRA to guarantee providing high quality broadband services by beneficiaries of state aid to end-users, which makes the statement "the requirement of 'guaranteed' 30 Mbps.

For any designed state aid measure, an examination should be required on whether the broadband network investment concerned would not have been undertaken within the same timeframe without any State aid.

About ETNO

ETNO (European Telecommunications Network Operators' Association) represents Europe's telecommunications network operators and is the principal policy group for European e-communications network operators. ETNO's primary purpose is to promote a positive policy environment allowing the EU telecommunications sector to deliver best quality services to consumers and businesses.

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