

BEREC Input to the European Commission's consultation on the revision of the Recommendation on relevant markets susceptible to ex ante regulation



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1. Introduction

The Recommendation on relevant markets susceptible to ex ante regulation (RRM) was last reviewed in 2020¹. According to Article 64(1) of the European Electronic Communications Code (EECC), the European Commission (EC) shall review the Recommendation regularly².

The EC started the review process with a targeted consultation that opened on 17 June 2025³. Following the conclusion of this exercise on 30 September 2025, the EC will analyse all the inputs received and prepare a draft Recommendation. BEREC is to issue an Opinion on this draft Recommendation and the EC shall take it into utmost account when preparing the final version of the new Recommendation⁴.

This document is the BEREC response to the targeted consultation, as approved by e-voting procedure on 30 September 2025. The document is organised as follows: section 2 addresses the current status of ex ante regulation in Europe (i.e. EU/EEA, as well as the United Kingdom (UK) and Switzerland), section 3 deals with market developments and their (potential) impact on the relevant markets in electronic communications discussed in the RRM and section 4 focuses on the importance of the RRM regulatory tool for the sector. Finally, section 5 presents the conclusions.

BEREC is available to collaborate further with the EC during the review process leading to the adoption of the new Recommendation. In this context, the current response should be considered as an initial step in this collaborative process.

2. Current status of ex ante regulation in Europe

Current data indicates that the markets included in the RRM are still regulated, at least partially, in a significant number of Member States (MS). This is likely due to a common characteristic shared by these markets: reliance on network elements (access up to the end-user) that can be difficult for competitors to duplicate. Where economic and technical barriers are still present, there is a need to impose ex ante regulation in order to safeguard effective competition by preventing potential abuse of market power by the Significant Market Power (SMP) operator(s).

¹ Commission Recommendation of 18 December 2020 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code.

² "After public consultation including with national regulatory authorities and taking the utmost account of the opinion of BEREC, the Commission shall adopt a Recommendation on Relevant Product and Service Markets ('the Recommendation'). The Recommendation shall identify those product and service markets within the electronic communications sector the characteristics of which may be such as to justify the imposition of regulatory obligations set out in this Directive, without prejudice to markets that may be defined in specific cases under competition law. The Commission shall define markets in accordance with the principles of competition law. The Commission shall include product and service markets in the Recommendation where, after observing overall trends in the Union, it finds that each of the three criteria listed in Article 67(1) is met. The Commission shall review the Recommendation by 21 December 2020 and regularly thereafter."

³ <https://digital-strategy.ec.europa.eu/en/news/commission-launches-consultation-revision-recommendation-relevant-markets>

⁴ Note that this response to the targeted consultation should not be construed as BEREC's opinion, which will follow at a later date once the Commission produces its draft Recommendation.

Data regarding market regulation (grouped by the relevant market it concerns) valid as of 08 September 2025 is provided below. The information is based on the Cullen International market analysis database⁵, as well as the respective EC and EFTA Surveillance Authority (ESA) decisions regarding National Regulatory Authorities' (NRA) notified draft measures.

2.1. Wholesale local access market (M1/2020)

In their latest round of market analyses of the wholesale local access markets (WLA - M1/2020), 22 EU NRAs⁶, as well as the NRAs of Liechtenstein, Norway and the UK found SMP. Only 5 EU MS⁷ have entirely withdrawn SMP regulation on the WLA market.

As alternative operators continue to deploy Very High-Capacity Networks (VHCN(s)), primarily in densely populated areas, an increasing number of EU MS are recognizing that competitive conditions are no longer homogenous across the national territory, but vary sufficiently across different regions. Taking into account the degree of infrastructure-based competition, 11 NRAs⁸ designated SMP only in specific parts of the market (i.e. defined subnational markets susceptible to ex ante regulation) with remedies only imposed in these markets⁹, whereas Italy also geographically segmented the price-control remedy in these markets. Other EU MS, such as Cyprus, France and Slovenia, on the other hand, imposed geographically segmented remedies in national wide markets. Additionally, some NRAs established separate markets for copper and fibre based WLA services (e.g. Croatia, Estonia, Ireland, Latvia), allowing for different geographical treatments of fibre markets and/or deregulation of copper-based markets. The vast majority of countries that have defined separate product markets for copper-based services found the geographic dimension as national.

MS that regulate the WLA market still find that entry barriers are high and non-transitory. This is due to (i) the substantial sunk costs involved by the rollout of new VHCNs and (ii) the considerable time required for any potential entrant to replicate an access network up to the end-user. Without ongoing regulatory intervention, it is unlikely that the competitive dynamics in this market will change significantly or sufficiently towards greater competition in the foreseeable future. Since infrastructure competition is unlikely to develop homogeneously in all areas due to a number of factors that inhibit economic viability for national deployment (such as low economies of scale and scope, scattered population, low-income households), **it is expected that in a large number of Member States effective retail competition cannot be ensured without ex ante wholesale regulation in the timeframe to be considered in the review of the RRM.** Given the importance of effective and timely network access, competition law alone is generally regarded as insufficient to address these bottlenecks.

Therefore, the consensus across the EU is that the WLA market still requires ex ante regulation in most MS/areas, although there is a trend towards narrowing the scope of

⁵ <https://www.cullen-international.com/product/applications/MarketAnalysis/intro.htm>

⁶ Belgium, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Poland, Portugal, Slovakia, Slovenia and Sweden.

⁷ Austria, Bulgaria, the Netherlands, Romania and Spain. The access to the physical infrastructure will remain, however, regulated in Spain under the current ex ante obligations, which were imposed in the previous review of the WLA market in October 2021, until CNMC adopts a decision concerning the commitments that the incumbent operator offered to provide third parties with access to its physical infrastructure and further finalizes the ongoing review of the separate wholesale market for access to physical infrastructure.

⁸ Croatia, Czech Republic, Denmark, Estonia, Finland, Hungary, Ireland, Italy, Latvia, Poland and Portugal.

⁹ OFCOM in the UK defined two geographic areas that are both regulated.

regulation (whether at a sub-national market level or through geographically differentiated remedies) as alternative operators continue to rollout VHCNs.

2.2. Wholesale dedicated capacity market (M2/2020)

The wholesale dedicated capacity market (WDC - M2/2020) is (at least partially) subject to ex ante regulation in more than half of EU MS¹⁰ (15), as well as in Switzerland and the UK. By contrast, some countries have determined that market conditions are sufficiently competitive, resulting in no SMP designation (12 EU MS¹¹, Norway and Liechtenstein).

Similar to the developments in the WLA market, the WDC market is also marked by technological advances: traditional PDH/SDH leased lines¹² are rapidly being replaced by technologies such as Ethernet and xWDM. Regulators have adjusted their product definitions accordingly. Only Ireland and Poland have applied a form of product segmentation, based on either the underlying infrastructure (copper/fibre)/ technologies or the bandwidth/capacity of the leased lines.

An important issue in defining the corresponding product market is whether it should include only active services or also passive elements like dark fibre. In countries with widespread point-to-point optical networks, large business users and operators are already utilizing dark fibre in ways similar to active links. Consequently, some NRAs (e.g. Austria, the Netherlands, UK) consider dark fibre to be part of the market due to increasing demand, its substitutability with high capacity Ethernet leased lines, its role as an ancillary service to reach nodes where the wholesale terminating segments are provided and its importance for connectivity in less competitive areas. Nevertheless, the prevailing approach is to exclude dark fibre from the definition of the wholesale dedicated capacity market.

Also, there is an issue as to whether mobile backhaul services should be included in the market definition. In many EU MS¹³, as well as in the UK and in Liechtenstein, mobile backhaul is generally included in the definition of the WDC market. Decisions to include mobile backhaul within the market are generally based on growing contestable demand, its substitutability with other dedicated capacity services, and, in some countries (e.g. Austria, Slovenia, Croatia, UK), the specific need to support 5G rollout.

Due to the multisite nature of the retail demand for these services¹⁴, in the WDC market there are significantly fewer countries that have applied geographical segmentation of product markets relative to the case of the WLA market. In this respect only 4 MS - namely Austria, Ireland, Italy and Portugal have done so, as well as the UK.

MS that assess the WDC market consistently find that entry barriers remain high and non-transitory. This is primarily due to (i) the very high deployment costs of dedicated fibre infrastructure, particularly in rural and less densely populated areas, and (ii) the limited expectation that alternative networks will be rolled out in these regions. Without sustained

¹⁰ Austria, Belgium, Croatia, Cyprus, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, Luxembourg, Portugal, Slovenia and Spain.

¹¹ Bulgaria, Czech Republic, Denmark, Estonia, Finland, Latvia, Malta, the Netherlands, Poland, Romania, Slovakia and Sweden.

¹² Leased line services using the Plesiochronous/Synchronous Digital Hierarchy technologies.

¹³ Austria, Belgium, Croatia, France, Germany, Greece, Ireland, Poland, Portugal, Slovakia, Slovenia and Spain.

¹⁴ Given that business users have multiple locations across an area/region or even at national level in a MS, they need connectivity services to link all their points of presence supplied by the same operator and, therefore, the demand for the dedicated capacity services is deemed as multi-site in nature.

regulatory intervention, a significant shift in competitive dynamics is not anticipated in the foreseeable future. Infrastructure competition is unlikely to emerge in all areas, particularly where economic conditions do not support the duplication of networks (e.g. low population density, limited demand, high investment risk). As a result, effective retail competition cannot be guaranteed without ex ante regulation of wholesale access. Given the strategic advantage held by incumbents, who typically operate nationwide networks and are better positioned to secure multi-site contracts and deliver advanced services, competition law alone is insufficient to address persistent market failures.

In conclusion, ex ante regulation for the WDC market remains necessary in a high number of countries, with adaptations for technological evolution and, in some cases, geographic segmentation. Its importance to support business users is expected to increase in the future, as industrial applications are heavily reliant on connectivity services.

2.3. Wholesale central access market (M3b/2014)

The wholesale central access market (WCA – M3b/2014) was removed from the list of markets recommended for ex ante regulation in 2020, and the number of countries regulating it is gradually decreasing. Nonetheless, in their latest round of market analyses, 13 EU NRAs¹⁵ as well as NKOM in Norway still found SMP in the WCA market, at least in specific parts of the market. Currently, 14 EU MS¹⁶ and Liechtenstein do not have SMP in the WCA market.

Since the WLA and WCA markets are related in that both of them are lying upstream of the retail market for mass-market broadband access services, 9 EU MS¹⁷, Liechtenstein and the UK that currently regulate WLA concluded that WCA market is competitive, with regulation upstream being enough to correct the market irregularities downstream. Furthermore, 3 EU MS that did not implement geographic segmentation in the WLA market¹⁸ have identified competitive sub-national markets within the WCA that do not require SMP regulation. Thus, BEREK observes that deregulation of the WCA market is often enabled by the regulation of the WLA market upstream.

In conclusion, despite the fact that regulation of the WCA market is declining, a sizeable number of NRAs still perceive barriers to entry at least in certain areas of the country (e.g. in less densely populated areas), where the presence of high and permanent barriers to entry leads to long-term absence of effective competition and the WLA regulation is not deemed enough. Consequently, in those MS, the possibility of continuing to regulate the WCA market on an ex ante basis needs to be retained.

2.4. Physical infrastructure access market (PIA)

The PIA market has never been included in the RRM. However, PIA regulation can be used as a cross-market remedy that impacts all the other specific markets that may be defined

¹⁵ Belgium, Croatia, Denmark, Estonia, Germany, Greece, Hungary, Latvia, Lithuania, Luxembourg, Poland, Slovakia and Slovenia.

¹⁶ Austria, Bulgaria, Cyprus, Czech Republic, Finland, France, Ireland, Italy, Malta, the Netherlands, Portugal, Spain and Sweden, while in Romania the WCA market was never regulated.

¹⁷ Cyprus, Czech Republic, Finland, France, Ireland, Italy, Malta, Portugal and Sweden.

¹⁸ Germany, Lithuania and Slovenia.

downstream. Many countries in Europe¹⁹ regulate PIA in some form or another through asymmetric means²⁰. According to Cullen International, “*regulators in 23 European countries imposed access to ducts as ex ante remedy*”²¹.

In countries where the former incumbent owns a ubiquitous physical infrastructure (civil engineering) network that is widely used by alternative operators to deploy their VHCNs, and that simultaneously is an essential, non-replicable infrastructure, the PIA market has been identified as being susceptible to ex ante regulation. In Bulgaria, Estonia, France, Ireland, Latvia, Portugal and the UK, the NRAs defined a separate PIA market²². The geographic scope of the identified markets is national. The NRAs in the aforementioned countries, except for Bulgaria, concluded that both ducts and poles are included in the relevant market.

In the concerned MS, NRAs have determined that the PIA market is characterized by high and non-transitory barriers to entry due to the large size of the incumbent’s network, the correspondingly large investment required to replicate it and the associated sunk costs. The market is found not to tend towards effective competition, as there is no current or potential alternative to the existing PI and there are no technological advancements that would enable rapid deployment or optimised use of alternative PIs. Finally, they concluded that competition law is not sufficient to address the identified market failures. In particular, the delayed impact of ex post remedies and the fact that National Competition Authorities only intervene in specific circumstances (i.e. abuses of dominance) cannot guarantee effective and timely access to essential infrastructure. Consequently, the wholesale PIA market in these countries is seen as needing ex ante regulation to prevent the abuse of market power and to support infrastructure-based competition. Asymmetric access obligations usually contain a requirement to publish a reference offer and to comply with a specific price control methodology²³.

In any event, PIA is seen as being of utmost importance for the provision of any electronic communications network and/or service in many countries. BEREC notes the recent trend of considering PIA as a standalone market within the EU, enabled by ubiquitous availability of passive infrastructure, contributed to effective competition in the downstream markets, at least partially. Establishing specific obligations targeted at PIA may prove an effective means for (total or partial) deregulation of other relevant markets.

2.5. Wholesale fixed and mobile voice call termination markets (M1/2014 and M2/2014)

The markets for fixed voice call termination (FTR - 1/2014) and mobile voice call termination (MTR - 2/2014) were withdrawn from the list of markets recommended for ex ante regulation in 2020.

¹⁹ Besides the EU countries (15 MS as of July 2024), Liechtenstein and Norway also regulated PIA as an ancillary remedy to the WLA or WDC markets. Further details on PIA regulation can be found in the BEREC Report on the regulation of physical infrastructure access – document BoR(25)77 - [Link](#) .

²⁰ PIA may be regulated by other means (i.e. symmetrically).

²¹ <https://www.cullen-international.com/client/site/documents/CTTEEU20250032>

²² In Bulgaria, the decision is being challenged in Court and has not entered into force yet.

²³ Further details on remedies setting relating to PIA are also to be found in the BEREC Report on the regulation of physical infrastructure access - [Link](#)

Since 2020, NRAs in 13 EU countries²⁴ have withdrawn SMP regulation on both the fixed and mobile voice call termination markets. Additionally, in the same timeframe, the NRAs in Greece, Italy and Spain removed the SMP regulation on the wholesale mobile call termination market. BEREC notes that such removal would not have been possible without the adoption of the Delegated Regulation introducing EU-wide maximum tariffs for both fixed and mobile voice call termination services²⁵ due to the monopolistic structure of these markets, in a calling-party pays scheme. The network of every individual provider of fixed or mobile voice call termination services forms a separate relevant market.

However, several countries still regulate the termination markets (14 EU MS regulate FTR²⁶ and 11 MTR²⁷). Although the risk of excessive prices has been removed, since 2021, the NRAs in Hungary, Italy, Latvia and the Netherlands concluded that the FTR market still fulfils the three criteria test and needs to be regulated. The NRAs in Hungary, Latvia, the Netherlands and Poland concluded the same for the MTR market. Their decisions are based on the findings that, despite the regulated tariff, other anticompetitive behaviours like refusal of access, as well as non-price tactics such as withholding or discriminatory use of information, delaying access, imposing unfair conditions, and the application of excessive rates on services ancillary to termination may occur. In such cases, the possibility for NRAs to conduct the three criteria test and impose obligations where needed was deemed extremely important.

2.6. Other markets

A number of NRAs (10 EU MS²⁸) continue to regulate the wholesale broadcasting transmission services market (M18/2003). At the same time, in 3 EU MS²⁹ there is still a need for regulation of the wholesale trunk segments of leased lines market (M14/2003), while regulation of access and call origination on mobile networks market (M15/2003) is applicable only in Norway.

By contrast, the minimum set of leased lines market (M7/2003) and the call origination on fixed networks market (M8/2003 or M2/2007) are no longer subject to ex ante regulation in the EU, but Switzerland and the UK still regulate the former. There are also other markets which have been previously included in the 2003 RRM and that are not regulated anymore in the countries for which data has been presented, such as the retail markets for access and calls at a fixed location (i.e. access to a fixed telephone network and provision of fixed telephone services) or the market for wholesale fixed transit services (M10/2003).

²⁴ Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, France, Germany, Ireland, Romania, Slovakia and Slovenia.

²⁵ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021R0654>

²⁶ Estonia, Finland, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Spain and Sweden.

²⁷ Estonia, Finland, Hungary, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal and Sweden.

²⁸ Austria, Belgium, Cyprus, Finland, France, Hungary, Ireland, Poland, Spain and Sweden.

²⁹ Croatia, Greece and Portugal.

3. Market developments

In what follows, BEREC presents the main developments in the telecommunications sector which can potentially have an impact on the relevant access markets to be regulated based on an SMP finding, and therefore included in the RRM.

3.1. General market developments

As regards general market trends, Europe has made strong progress on several indicators over the past few years:

- **Fixed VHCN coverage** grew from 50% to **82.5%** (DESI 2020-2025 reports³⁰) in the EU. In terms of **fibre coverage**, EU MS have a relatively high share of Fibre-to-the-Premises (FTTP) coverage, **most of them being above the United States (US)**³¹. Similarly, the US lags behind the EU in terms of fibre adoption.
- When it comes to **5G**: **94.3%** of the EU's population was covered by at least one 5G network in 2024, compared to the 97% observed in the US and 95% in China (DESI 2025 report).

At the same time, **prices in Europe are far lower than in the US**, which **contributes to high consumer welfare and European competitiveness**, as telecom services are an input for all other economic sectors. Aligning European average revenue per user (ARPU) with that in the US would imply European businesses and citizens would have to pay three³² times as much. Moreover, in the vast majority of EU MS, markets have moved from former monopolies towards a more competitive environment in which alternative operators challenge the historical incumbents.

BEREC considers that these market outcomes are a testament to the effective implementation of the current framework of ex ante regulation supporting investments, as well as competition that leads to innovation and lower prices for consumers and businesses. BEREC also observes the significant progress regarding competition and VHCN investments since the adoption of the 2020 RRM.

3.2. Fibre rollout and copper switch-off

In recent years, the rollout of FTTP networks has progressed significantly in EU MS. In addition to the incumbent operators, several alternative operators, utilities operators, municipalities, and other market players have rolled out their own FTTP networks, often on a regional or local scale and sometimes supported by state aid funding. Some of these players are vertically integrated, while others operate only at the wholesale level. While some countries have already achieved near-complete fibre coverage, the rollout is still progressing in others³³.

In particular, in MS where fibre rollout is already extensive (such as Romania, Spain, Portugal, Bulgaria), incumbent operators have started to switch-off and/or dismantle their copper

³⁰ The 2025 State of the Digital Decade Report is based on data on coverage valid as of mid 2024. The figures corresponding to the situation in 2025 are likely higher.

³¹ <https://www.oecd.org/en/topics/sub-issues/broadband-statistics.html>.

³² Figure 2 in Chapter 3 of the Draghi report.

³³ See DESI 2025 indicators, Fibre to the Premises (FTTP) coverage, available at https://digital-decade-desi.digital-strategy.ec.europa.eu/datasets/desi/charts/desi-indicators?period=desi_2025&indicator=desi_fttp&breakdown=total_pophh&unit=pc_hh&country=AT,BE,BG,HR,CY,CZ,DK,EE,EU,FI,FR,DE,EL,HU,IE,IT,LV,LT,LU,MT,NL,PL,PT,RO,SK,SI,ES,SE

infrastructure, and in some countries, the switch-off is almost complete³⁴. For example, in Spain the copper network was fully switched off in May 2025, in Liechtenstein full copper switch off was achieved in 2023 and there are also other MS where it can be expected that copper networks will be shut down in the short or medium term. Actually, in terms of competition, the switch-off of the copper network results in the elimination of a previously effective competitive constraint.

Moreover, in many countries, the economics of network deployment, especially the constraints posed by economies of density³⁵, suggest that (in particular outside very densely populated areas) only one or at most two fixed VHCNs are likely to emerge. There is no compelling reason for BEREC to expect this structural limitation to change significantly in the foreseeable future, especially in less densely populated areas. BEREC is therefore of the opinion that the presence of high and non-transitory barriers to market entry and bottlenecks to network replication in the fixed network access segment are likely to remain, particularly at a sub-geographic level.

As a result of the emergence of local and regional operators, the definition of distinct geographic markets with possible new regional/local operators with SMP is becoming more likely³⁶. Moreover, as there is often a gap between the planned pace of FTTP-rollout and/or copper switch-off, and the pace actually observed, variations in competitive conditions can be unstable and difficult to predict.

3.3. Wireless and satellite services

With the rollout and increasing use of 5G, as well as the emergence of Low Earth Orbit (LEO) satellite services, there have been significant developments in the area of wireless broadband networks. From a general perspective, BEREC doubts that mobile 5G services³⁷ and LEO satellite services constitute a sufficiently close substitute for fixed broadband services, especially for those provided over fibre with high performance in terms of latency and speed, such that they should fall within the same market, and supports a case-by-case analysis. Only two NRAs have considered mobile services as a competitive constraint for fixed broadband services³⁸ in the retail market. In the case of LEO satellite services, BEREC observes that demand is more likely to be limited to areas with insufficient coverage by traditional technologies³⁹.

3.4. Activity of CAPs in ECS/ECN-related markets

Over the past few years, several digital platforms and content and application providers (CAPs) have become active in markets formerly served mainly by telecommunications

³⁴ See “BEREC Progress Report on managing copper network switch-off”, document BoR (25)66, [Link](#)

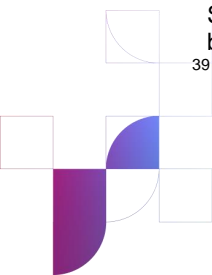
³⁵ Other constraints determinative to the population density impact fixed networks roll out, such as geographic and/or topographic issues.

³⁶ See for example the case of the market for high capacity broadband in Denmark from 2021 (Case DK/2021/2346).

³⁷ BEREC refers to mobile access services, while Fixed Wireless Access (FWA) connections over mobile (like 4G, 5G) networks could fall within the market.

³⁸ RTR in Austria, so far defined a common market for fixed and mobile broadband (for residential products on the retail level, see case AT/2022/2389). CTU in Czechia defined retail broadband access market to include also specific fixed access services over mobile networks (LTE/5G), see cases CZ/2023/2443 and CZ/2023/2444. SPRK in Latvia, defined separate retail copper and wireless submarket to include also unlimited 4G/5G mobile broadband (data only), see case LV/2024/2502.

³⁹ See “BEREC Report on satellite connectivity for Universal Service”, document BoR(22)169, [Link](#)



operators (e.g. messaging and voice services, content delivery networks (CDNs) or subsea cables), as well as in markets closely linked to telecommunications services (e.g. cloud services, video streaming content). The relationship between CAPs and electronic communication services (ECS) or electronic communication network (ECN) providers is discussed in the 2024 BEREC CAPs Report⁴⁰. However, the competitive pressure from CAPs concerns areas or markets which are not included in the current RRM. The BEREC CAPs Report observes that there have not been any cases in Europe so far where CAPs have built their own fixed access networks. Therefore, competition from CAPs does not appear to affect at this point in time the markets currently included in the RRM or a potential market for PIA, as defined and analysed by some NRAs.

3.5. Commercial agreements

Some cases of commercial co-investment schemes and commercial access agreements have been observed in recent years. In a small number of cases this has led to deregulation⁴¹ or a relaxation of regulation⁴². While commercial agreements can lead to positive competitive effects on the markets, BEREC does not see that such agreements would render, in principle, ex ante regulation unnecessary. Some of these commercial agreements have been driven by the prospect of a deregulatory stance in the event of an agreement or the threat of regulatory intervention. In many cases, however, the durability of these commercial agreements over time remains uncertain. Even where such agreements currently function effectively, BEREC maintains that relying solely on commercially negotiated outcomes, without the underlying possibility or threat of regulatory intervention, would be insufficient to safeguard long-term competitive outcomes. In particular, when access to a bottleneck infrastructure is at stake, the availability of ex ante SMP regulation remains essential in order to provide a credible threat, as well as a fall-back option if needed.

3.6. Symmetric regulation

In addition to asymmetric (SMP-based) ex ante regulation, which is widely regarded as a successful regulatory model, there are also several instruments of symmetric regulation for access services available to NRAs. For instance, the EECC includes the possibility for symmetric access regulation to wiring and cables and associated facilities in Article 61(3). Furthermore, the Gigabit Infrastructure Act⁴³ (GIA), adopted in 2024, which replaces and further develops the Broadband Cost Reduction Directive⁴⁴ (BCRD) from 2014, also includes symmetric measures (e.g. access to PIA and coordination of civil works).

Symmetric access obligations can in some cases serve as an effective regulatory tool to ensure access to network facilities and civil infrastructure, support end-to-end connectivity, as well as promote efficient investments and competition. They may also help in creating similar

⁴⁰ See „BEREC Report on the entry of large content and application providers into the markets for electronic communications networks and services“, document BoR(24)139, [Link](#)

⁴¹ See for example case AT/2022/2389.

⁴² See for example cases ES/2025/2582-2583 where commercial agreements are considered as one of the drivers that justifies the full deregulation of wholesale active access services over fibre.

⁴³ OJ L, 2024/1309, Regulation (EU) 2024/1309 of the European Parliament and of the Council of 29 April 2024 on measures to reduce the cost of deploying gigabit electronic communications networks, amending Regulation (EU) 2015/2120 and repealing Directive 2014/61/EU, 8.5.2024, [Link](#)

⁴⁴ OJ L 155, Directive 2014/61/EU of the European Parliament and of the Council of 15 May 2014 on measures to reduce the cost of deploying high-speed electronic communications networks, 23.5.2014, [Link](#)

conditions for all operators, thereby ensuring a level playing field, which increases predictability and reduces administrative burden, especially for smaller operators. BEREC observes that the significance of symmetric regulation has already grown and is expected to grow further in the foreseeable future⁴⁵.

However, the practical application of symmetric access regulation has shown that while these provisions are important, they cannot substitute the asymmetric ex ante access regulation, which remains necessary to address structural competitive problems. Indeed, the limited number of MS who have applied symmetric regulation like the provisions of Article 61(3) EECC⁴⁶ cannot justify the removal of asymmetric ex ante regulation, and the conditions for applying BCRD/GIA symmetrical access are subject to wide exemptions. With regards to decisions under the BCRD, they are typically case-specific and usually do not allow for large scale network access under uniform conditions. While dispute settlement bodies (DSBs) can clarify access conditions through case law and guidelines, the general principle remains that commercial negotiations are the starting point. The dispute settlement process generally only allows for ex post control in the event of a dispute. The BCRD (and the GIA) do not aim to remedy structural competition problems, but rather to enable ECN operators to reduce costs of VHCNs deployment by enabling synergies. This is why their scope is limited when compared to the EECC – meaning that the remedies required to enhance competition and ensure effective access for access seekers are not primarily addressed through GIA (for instance, no obligation of equivalence of inputs which would be necessary to really control the non-discrimination obligation, or the cost-orientation remedy necessary to avoid creating a pricing advantage for the SMP operator). Moreover, to the degree the application of GIA leads to a more competitive environment, this will be reflected in the market analysis. However, the possibilities for shared use of infrastructure and coordination of civil works introduced by the BCRD did not, in themselves, lead to a significantly more competitive environment in most EU MS so far. The same can also be expected for cases under the GIA, as it does not depart significantly from the BCRD in this regard. Furthermore, its scope is mainly limited to civil engineering infrastructure, and does not extend to addressing competitive issues related to the wiring/cabling. Finally, the fact that several countries have defined relevant markets for PIA in the past few years also shows that symmetric regulation has not been sufficient to ensure appropriate access in these cases.

Moreover, symmetric regulation does not allow for the differentiation of regulated access conditions based on market power, which will be indispensable in many markets for at least the foreseeable future. Symmetric regulation is therefore an important complementary tool but cannot replace asymmetric ex ante regulation.

⁴⁵ As stated in the BEREC Report on Access to PI in the context of market analyses BoR (19) 94: [Link](#)

⁴⁶ “Symmetric regulation affecting the terminating segment, in line with past reports, is applied by 9 NRAs (ES, FR, HR, HU, IT, LV, PT, PL, SE) thus granting access to wiring and cables and associated facilities inside buildings or up to the first concentration or distribution point as determined by the national regulatory authority. Access obligation beyond the first concentration point (which would correspond to art. 61 paragraph 3 sub-paragraph 2) has been declared by 5 NRAs (FR, HR, HU, PL, SE)”, BEREC Regulatory Accounting in Practice Report 2024, pg 18, document BoR(24)166 – [Link](#)

4. The continued relevance of the RRM

The RRM together with the SMP Guidelines⁴⁷ ensure that NRAs define markets in line with the concepts and practices established by European competition law and therefore greatly contribute to the harmonization in the application of the European sectoral legislation.

BEREC considers that the RRM remains a key regulatory instrument to identify specific markets for which ex ante regulation may be required. The current version, which replaced the ones from 2014, 2007 and 2003, has enabled and reflected the deregulatory trend that has been observed in the telecommunications markets within the EU⁴⁸. It is important to note that, by and large, the deregulation of the markets contained in the 2020 Recommendation remains the exception across MS. As shown in section 2, in recent years, not many NRAs have found market trends allowing for large scale deregulation of WLA and WDC markets. Ex ante regulation remains essential, at least in less competitive (sub-national) markets.

The RRM provides for a sufficient level of flexibility and it did not prevent NRAs from deregulating markets when those were not susceptible to ex ante regulation anymore. In this regard, the three criteria test is crucial. It allows NRAs to assess whether the markets or submarkets that are part of the RRM are effectively competitive and, if this is the case, withdraw SMP regulation accordingly in the respective market or relevant market segments. In the other direction, for markets no longer part of the RRM (but either still regulated on the basis of previous market reviews or in which effective competition is likely to be impeded under the specific national circumstances), the three criteria test allows to maintain/amend or introduce ex ante regulation accordingly. Therefore, **the three criteria test is indispensable and must be maintained**. The possibility to conduct the three criteria test prevents the premature removal of ex ante regulation in the national markets concerned.

BEREC emphasizes that the harmonization as well as the deregulatory trend previously mentioned were allowed by the significant flexibility afforded by the tools set out in the RRM. The ability to either define distinct geographic markets or geographically differentiate the remedies, which NRAs increasingly make use of, have also contributed to the deregulation of geographical areas within the markets where competition was likely to develop on a forward-looking basis.

Geographical segmentation of product markets, as well as geographical differentiation of remedies has in fact enabled NRAs to (i) take into account the different pace at which competition evolves (and the resulting differences in the geographical competitive conditions within the same relevant product market), and to (ii) avoid maintaining ex ante regulation for longer than necessary in areas where this is no longer justified. By geographically differentiating the remedies, NRAs have tackled local competitive circumstances and unstable variations in competitive conditions without undermining regulatory predictability.

4.1. Competitive conditions of markets in the 2020 RRM and PIA

Regarding the markets included in the 2020 Recommendation, section 2 shows that markets 1 (WLA) and 2 (WDC) remain regulated (at least partially) in most MS. In addition, section 3

⁴⁷ Complemented by the 2024 EC Notice on the definition of the relevant market for the purposes of Union competition law. [Link](#)

⁴⁸ The number of markets susceptible for ex ante regulation has been reduced from 18 markets in the first Recommendation on relevant markets in 2003 to 2 markets according to the current Recommendation.

presents factors which indicate that these markets do not tend towards effective competition yet and that high and non-transitory barriers to entry still remain present across most MS, at least in certain geographical areas.

BEREC does not observe major market or technological trends that call for or would justify a widespread deregulation of said markets across the EU. Indeed, as was described above, the deployment of fibre or VHCN in general with the prospect of copper switch-off does not necessarily in itself create a more competitive market structure nationwide, but actually eliminates a previously-existing competitive constraint. In fact, many areas within the EU will continue to be covered by only one network infrastructure even (or especially) after replacing the legacy network with fibre. At the same time, BEREC observes that regulatory tools - such as Art. 76 (co-investment) and Art. 80 (wholesale only) - introduced by the EECC and designed to ensure structural competition on one network have not been utilized by market participants at a scale sufficient⁴⁹ to greatly affect the competitive conditions. Art. 78 on voluntary separation has also been scarcely used⁵⁰.

Concerning WLA market, the EC observed in the last review of the RRM that *'In the large majority of MS, the WLA market is characterised by the existence of only one infrastructure capable of offering local access products on a national scale'*⁵¹. The high sunk costs and the time required to replicate said infrastructure were the main reasons for the EC to consider the entry barriers in this market are high and non-transitory. Besides this, the EC found that there was a rather small number and often limited geographic reach of competitors operating their own alternative infrastructure. Therefore, the EC considered it unlikely that, without continued regulatory intervention, the competitive dynamics would change significantly on a national scale over the foreseeable future. Networks based on alternative technologies such as cable or mobile technologies, which could potentially be considered substitutes for traditional WLA access products, would be likely to remain limited both in terms of their geographic coverage and in terms of availability of wholesale access products⁵².

From BEREC's point of view, there has been little change to these fundamental market characteristics since the most recent revision of the RRM and where advances were observed, these have been duly taken into account by NRAs in their respective market analyses, with oversight by the EC. Therefore, barriers to entry should still be considered high and non-transitory at the EU level, since this holds true for a vast number of MS. Regarding the tendency towards effective competition, the EC determined that there were no (multiple) alternative fixed infrastructures available in most areas of the EU⁵³. Direct (wholesale) competitive constraints were therefore largely non-existent, such that effective retail competition would not be ensured without regulation of wholesale local access (despite a

⁴⁹ As to the wholesale access to fixed broadband markets AGCOM (IT) and DBA (DK) are the only NRAs that have utilized Art. 76 (co-investment) and Art. 80 (wholesale only), respectively.

⁵⁰ See subsection on functional separation in the BEREC Regulatory accounting in practice 2024 Report, page 44-45, document BoR(24)166 – [Link](#).

⁵¹ Commission Staff Working Document, Explanatory Note Accompanying the document Commission Recommendation on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code, SWD(2020) 337 final, 18.12.2020, page 49.

⁵² See Explanatory Note, page 49 f.

⁵³ The Exploratory note states that *'The availability of (multiple) alternative fixed infrastructures is not yet the predominant market structure in a majority of the Member States'*. Also, NRAs are considering the number of operators as a proxy for competition, with three or more operators being used as a criterion to distinguish effectively competitive areas (for instance, in the recent Case ES/2025/2582-2583).



potential increase of the significance of indirect constraints). The assumption that more operators started replicating existing networks since the latest revision of the RRM or that they will do so in the foreseeable future remains unfulfilled for many areas within the EU⁵⁴.

As a result, BEREC does not currently identify a tendency towards effective competition in this market on a Union-wide level. In the light of this, ex post competition rules would not be able to effectively address the observed market failures in the majority of MS, requiring frequent intervention, persistent monitoring and price setting remedies. Effective and timely network access could not be guaranteed by application of ex post competition law alone⁵⁵. As a consequence, BEREC considers that **all three criteria of the three criteria test will be cumulatively met and will continue to be met in most MS in the foreseeable future**.

The very same observation applies to the WDC market. As the EC stated in the Explanatory Note to the RRM, the cost of deploying Point-to-Point fibre is very high, especially in rural areas. In these areas, it was not expected that alternative infrastructures will be deployed. Furthermore, even when passive offers with appropriate service levels are available on alternative infrastructure, alternative activated offers (on the WDC market) might not be available locally. As a consequence, a significant change in the competitive dynamics in this market over the foreseeable future is considered unlikely throughout the EU without continued regulatory intervention. Moreover, nation-wide networks – which are usually only provided by one operator in most MS – represent a competitive advantage to secure multi-site contracts⁵⁶. As these observations have remained true for most of the MS since the last review of the RRM, the barriers to entry still have to be considered as high and non-transitory for this market as well. A tendency towards effective competition did not and will most likely not emerge in most MS. Expansion of new networks would, at most, only be likely for denser areas. In most parts of the EU, **incumbents are still better positioned to develop dedicated infrastructure outside these populated areas. Therefore, they most likely have an advantage in gaining multi-site contracts, as well as in the swift provisioning of 5G and better broadband connection quality**. Taking this into consideration, incumbents' incentives to offer appropriate wholesale access (including in terms of price) voluntarily on a commercial basis still seem quite limited in large parts of the Union⁵⁷. As a consequence, ex post competition law will not be sufficient to address failures in this market as well, in the majority of the MS⁵⁸. As is the case with the WLA market, BEREC is of the opinion that the three criteria of the three criteria test should still be considered as met on a unionwide level for WDC.

Beyond WLA and WDC markets, in countries where the former incumbent owns an ubiquitous physical (civil engineering) infrastructure network and depending on the national circumstances, an increasing number of NRAs have defined a separate market for access to PI under the SMP regime. It can therefore be considered that the current framework provides NRAs with the required flexibility to define markets (different from the ones listed in the annex of the RRM) such as the PIA market, which could ultimately facilitate the deregulation (full or partial) of downstream wholesale markets such as WLA and WDC markets.

With respect to the need for ex ante regulation of PIA and the increasing relevance of the definition of a specific market for that wholesale access service, the BEREC Report on PIA

⁵⁴ See Explanatory Note, page 51.

⁵⁵ See Explanatory Note, page 51.

⁵⁶ See Explanatory Note, page 59.

⁵⁷ See Explanatory Note, page 60.

⁵⁸ See Explanatory Note, page 60.

regulation stressed that *“the majority of NRAs are of the view that sole reliance on symmetric regulation is not likely to be considered sufficient to meet the future challenges in fostering competition and network investment”*⁵⁹. For instance, the SMP regime allows for timely intervention and – if necessary – in large scale. This includes pricing remedies based on e.g. cost-oriented prices and clear access conditions via reference offers, as the full scope of SMP remedies is available.

BEREC emphasizes that the observed deregulatory trend throughout the EU should - against this background - be considered with caution. Situations in which market 1 (WLA) was not considered susceptible to ex ante regulation are mainly found in MS where a PIA market has been defined and regulated and effective and timely access is being provided by the former SMP operator with a consequential positive impact on downstream markets (even though regulating PIA in itself does not necessarily allow for deregulation of market 1). It can therefore be assumed that, in most of the circumstances, NRAs which do not define and regulate such an infrastructure market will typically not be able to identify a tendency towards effective competition (and a reduction of barriers to entry) any time soon.

Following the analysis as set out in section 3.6, the application of the GIA, given its case-by-case nature, the different set of objectives and its inability to address competition problems in a targeted way, is not sufficient to replace ex ante market regulation and therefore is not a valid argument for the removal of markets from the RRM. Generally, **the GIA alone is not sufficient to address the remaining competition problems in most MS**, for the reasons mentioned above.

Hence, BEREC is of the opinion that the RRM remains an essential tool for ex ante regulation and, to a certain extent, for harmonization of the markets. The RRM provides clarity to all actors in the relevant markets identified by the EC and to be reviewed by NRAs, and is still necessary. These observations should build the basis for any further review of the European legal framework.

Furthermore the revised RRM needs, at the very least, to uphold established regulatory tools (e.g. the definition of product and geographical markets and assessment of the three criteria test and SMP). This is essential to create legal certainty for the NRAs, as well as the market players.

In this regard, both the three criteria test and the geographical segmentation (either through the definition of distinct geographic markets or through the segmentation of remedies) are considered key elements that should be part of the revised RRM. They (i) are based on well-established principles, (ii) are transparent and well-known to all market participants and (iii) ensure the possibility to withdraw SMP regulation on markets in accordance with the differences in trends that may still persist within the EU; not only between national markets but within national markets.

A premature removal of markets from the RRM would create significant challenges, where competitive conditions and/or specific national circumstances require continued regulation of one or more of the markets. If these markets were no longer considered susceptible to ex ante regulation at EU level, the evidentiary burden to justify national measures (and to defend them before Courts) would substantially increase for those NRAs who still identify market failures and hence the need for further regulation. It would result in longer and more complex market

⁵⁹ BEREC Report on the regulation of physical infrastructure access, 5 June 2025 BoR (25) 77.

analysis processes. It would also increase uncertainty for operators and investors, especially for those who rely on access to the networks of the large operators. More generally, moving away from the well-established ex ante mechanism could generate disruptions resulting in a loss of predictability of market conditions for players that have undertaken long-term investments in the current setting.

Furthermore, BEREC notes that prior to 2020, markets were removed from the RRM based on Union-wide trends toward competition. However, the 2020 RRM eliminated markets even when sufficient Union-wide trends were not evident, leaving only two markets subject to ex ante regulation. The latest proposed review suggests that these remaining markets may no longer meet the three criteria test, raising the possibility of their removal as well. Nevertheless, BEREC's reporting consistently demonstrates that these two markets do not show Union-wide competitive trends, particularly at the sub-geographic level, currently and for the foreseeable future. The only reason for divergence could be that the markets developed very differently throughout the EU, rendering it impossible for the Commission to preset common Union-wide defined markets. In addition to the RRM, BEREC sees as extremely important for the EC to keep the general guidance on how markets should be defined by NRAs in accordance with Union law in the Explanatory Note, to provide predictability and clarity for the sector as regards the assessments, as well as preserve the harmonizing-role that the accompanying documents have successfully played throughout the past years.

Any decision to remove markets from the RRM should be firmly grounded in factual evidence and a thorough assessment of competitive conditions at both national and sub-geographic levels to ensure that regulatory oversight remains effective where needed.

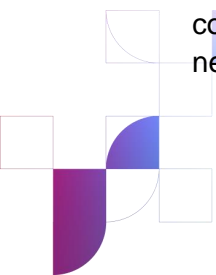
5. Concluding remarks

In light of the above, BEREC stresses that after more than 20 years of ex ante regulation, the regime has successfully opened up the electronic communications markets to effective competition. However, not all markets across all MS have yielded results, therefore, this indicates that ex ante regulation is still needed, and will continue to be needed, in the foreseeable future, to be applied proportionately where the market forces do not deliver effective competition by themselves.

A comparison of regulated markets shows that ex ante access regulation remains necessary in most of the EU MS to address competition issues for WLA and WDC markets. Access to ducts and poles is also essential in most countries, though it is typically regulated as a remedy within the downstream markets rather than through a separate PIA market. However, consideration of PIA as a standalone market is more likely to be done in countries with widespread ducts and poles presence.

Regarding other markets, despite the fact that they have been removed from the RRM, some many years ago, ex ante access regulation is still in place in a significant number of countries (e.g. the WCA, the termination or the broadcasting markets).

In the long run and depending on the business case, only one or, in some cases, two parallel fixed VHCNs can be expected to be available in most parts of the MS territories, particularly outside very densely populated areas. This means that without wholesale access regulation, competitive market conditions are likely to deteriorate. Therefore, BEREC sees a continued need to ensure access to bottleneck fixed network infrastructures in the period to be



considered by the review of the RRM. Symmetric access regulation under the EECC or the GIA, though it can work as a complementary tool to ex ante asymmetric regulation, is not sufficient to replace asymmetric ex ante regulation, as it has a different aim and scope. Thus it cannot be considered a substitute. With local or regional fibre networks, markets may become even more geographically fragmented than they are today and new bottleneck owners may emerge.

Countries with extensive networks of ducts and poles could rely on access to these passive infrastructures, while in other countries physical or virtual access is more appropriate, in particular because of limitations in reach and capacity of legacy PIA. NRAs should therefore have the necessary instruments available and the flexibility to apply them.

Quite importantly, in duopolistic (or oligopolistic) cases further instruments may be needed to address potential competition shortcomings. Reliance on traditional regulatory tools may prove insufficient to safeguard effective competition in such market settings. Experience from past cases demonstrates that the dynamics of such market configurations may create conditions where tacit coordination, parallel conduct, or the entrenchment of dominant positions render standard remedies inadequate⁶⁰.

Therefore:

(1) the **RRM remains an instrument with a pivotal role in ex ante regulation** and ex ante regulation remains essential in many instances. Despite the deregulatory trend observed in the past, which is proof that regulation worked and NRAs withdrew it where it was not necessary anymore, **full deregulation of the markets in the RRM is neither justified nor appropriate in the foreseeable future**. The deregulatory trend slowed down considerably with markets remaining in the RRM which are very upstream in the value chain. BEREC does not see any substantiated reasoning for which these markets could be removed from the RRM when applying the three criteria test across the EU.

(2) **Markets 1 (WLA) and 2 (WDC) still meet the three criteria test** as there has been little change to the fundamental market characteristics that the EC observed in its previous RRM.

(3) The availability of ex ante SMP regulation remains essential as **a fallback option** when NRAs are considering deregulation based on existing or anticipated commercial agreements.

(4) The **revised RRM needs, at the very least, to uphold established regulatory tools and principles such as the definition of product and geographical markets, the three criteria test and the identification of SMP**, maintaining the currently available flexibility⁶¹. This toolbox is essential to create legal certainty for all the parties involved. BEREC holds that the RRM instrument must be kept.

(5) **Removing the RRM prematurely will have detrimental effects**. It will create uncertainty for operators that rely on incumbent networks and undermine the predictability of market conditions for long-term investment, affecting both the industry and the investors alike. It would also increase the burden of proof for national regulators and extend market analyses timescales' and complexity. In BEREC's view, potential benefits from a removal of markets from the RRM, if any, are not evident given the framework's flexibility. The removal of the RRM

⁶⁰ See the proposals in the BEREC Report on Oligopoly analysis and regulation – document BoR(15)195 - [Link](#)

⁶¹ For instance, as regards geographical segmentation this enables accounting for variations in local competitive conditions.

itself, rather than representing a simplification, would be detrimental to the legal predictability of stakeholders. To an even greater extent, the removal of the RRM itself would generate significant costs and risks (i.e. harm to competition, decrease of predictability, higher burden of proof for the NRAs etc.).



Annex 1 ⁶²

M_1/2020 (3a_2014) Wholesale local access provided at a fixed location (WLA)

Country	Number of EU countries with SMP		Number of non-EU countries with SMP		Is there product segmentation? (Yes/No)	Is there geographic segmentation?			Link to the decision regarding the mk notification
	Year of EC notification	No. of SMP operators	Year SMP operator	No. of SMP operators	(e.g. in terms of speeds, underlying infrastructure, according to usage etc.)	Yes/No	How many geographic markets identified?	How many regulated?	
Austria	/	No	/	/	No	No	/	/	Link Here
Belgium	2018	1 Proximus	/	/	No	No	/	/	Link Here
Bulgaria	/	No	/	/	No	No	/	/	Link Here
Croatia	2023	1 HT	/	/	Yes	Yes	2	1	Link Here
Cyprus	2025	1 CYTA	/	/	No	No	/	/	Link Here
Czech Republic	2025	1 CETIN	/	/	No	Yes	389	72	Link Here
Denmark	2022	10	/	/	Yes	Yes	21	13	Link Here
Estonia	2024	1 Telia Eesti	/	/	Yes	Yes	2	1	Link Here
Finland	2025	16	/	/	Yes	Yes	309	109	Link Here
France	2023	1 Orange	/	/	No	No	/	/	Link Here
Germany	2019	1 Telekom Deutschland	/	/	Yes	No	/	/	Link Here
Greece	2022	1 OTE	/	/	No	No	/	/	Link Here
Hungary	2024	2	/	/	No	Yes	6	2	Link Here
Ireland	2023	1 Eircom	/	/	No	Yes	2	2	Link Here
Italy	2024	1 TIM / FiberCop	/	/	No	Yes	2	1	Link Here
Latvia	2024	1 Tet	/	/	No	Yes	2	1	Link Here
Liechtenstein	/	/	2023	1 LKW	No	No	/	/	Link Here
Lithuania	2019	1 Telia LT	/	/	No	No	/	/	Link Here
Luxembourg	2019	1 POST Luxembourg	/	/	No	No	/	/	Link Here
Malta	2012	1 GO	/	/	No	No	/	/	Link Here
Netherlands	/	No	/	/	Yes	Yes	2	/	Link Here
Norway	/	/	2018	1 Telenor	Yes	No	/	/	Link Here
Poland	2019	1 Orange PL	/	/	No	Yes	2	1	Link Here
Portugal	2023	3	/	/	No	Yes	2	1	Link Here
Romania	/	No	/	/	No	No	/	/	Link Here
Slovakia	2016	1 Slovak Telekom	/	/	No	No	/	/	Link Here
Slovenia	2021	1 Telekom Slovenije	/	/	Yes	No	/	/	Link Here
Spain	2025	No	/	/	No	Yes	2	/	Link Here
Sweden	2015	1 Telia	/	/	No	No	/	/	Link Here
Switzerland	/	/	2008	1 Swisscom	N/A	No	/	/	N/A
United Kingdom	/	/	2018	1 BT	No	Yes	2	2	Link Here

⁶² Source: Cullen International Market Analysis Database and NRAs reporting

M_2/2020 Wholesale dedicated capacity (WDC)

Country	Number of EU countries with SMP		Number of non-EU countries with SMP		Is there product segmentation? (Yes/No)	Is there geographic segmentation?			Link to the decision regarding the mk notification
	Year of EC notification	No. of SMP operators	Year SMP operator	No. of SMP operators	(e.g. in terms of speeds, underlying infrastructure, according to usage etc.)	Yes/No	How many geographic markets identified?	How many regulated?	
Austria	2023	1 A1 Telekom Austria	/	/	No	Yes	2	1	Link Here
Belgium	2019	1 Proximus	/	/	No	No	/	/	Link Here
Bulgaria	/	No	/	/	No	No	/	/	Link Here
Croatia	2025	1 Hrvatski Telekom	/	/	No	No	/	/	Link Here
Cyprus	2024	1 CYTA	/	/	No	No	/	/	Link Here
Czech Republic	/	No	/	/	No	No	/	/	Link Here
Denmark	/	No	/	/	No	No	/	/	Link Here
Estonia	/	No	/	/	No	No	/	/	Link Here
Finland	/	No	/	/	Yes	Yes	/	/	Link Here
France	2023	1 Orange	/	/	No	No	/	/	Link Here
Germany	2024	1 Telekom Deutschland	/	/	No	No	/	/	Link Here
Greece	2025	1 OTE	/	/	No	No	/	/	Link Here
Hungary	2019	1 Magyar Telekom	/	/	No	No	/	/	Link Here
Ireland	2020	1 Eircom	/	/	Yes	Yes	4	2	Link Here
Italy	2024	1 TIM / FiberCop	/	/	No	Yes	2	1	Link Here
Latvia	/	No	/	/	No	No	/	/	Link Here
Liechtenstein	/	/	2012	none	No	No	/	/	Link Here
Lithuania	2016	1 TEO LT	/	/	No	No	/	/	Link Here
Luxembourg	2020	1 Post Luxembourg (ex EPT)	/	/	No	No	/	/	Link Here
Malta	/	No	/	/	No	No	/	/	Link Here
Netherlands	/	No	/	/	No	No	/	/	Link Here
Norway	/	No	/	No	No	No	/	/	N/A
Poland	/	No	/	/	Yes	No	/	/	Link Here
Portugal	2023	MEO	/	/	No	Yes	2	1	Link Here
Romania	/	No	/	/	No	No	/	/	Link Here
Slovakia	/	No	/	/	No	No	/	/	Link Here
Slovenia	2019	1 Telekom Slovenije	/	/	No	No	/	/	Link Here
Spain	2025	1 Telefónica	/	/	No	No	/	/	Link Here
Sweden	/	No	/	/	No	No	/	/	Link Here
Switzerland	/	/	2012	1 Swisscom	N/A	No	/	/	N/A
United Kingdom	/	/	2021	1 BT	No	Yes	5	4	N/A

M_3b/2014 Wholesale central access provided at a fixed location for mass-market products (WCA)

Country	Number of EU countries with SMP		Number of non-EU countries with SMP		Is there product segmentation? (Yes/No) (e.g. in terms of speeds, underlying infrastructure, according to usage etc.)	Is there geographic segmentation?			Link to the decision regarding the mk notification
	Year of EC notification	No. of SMP operators	Year SMP operator	No. of SMP operators		Yes/No	How many geographic markets identified?	How many regulated?	
Austria	/	No	/	/	No	No	/	/	Link Here
Belgium	2018	4	/	/	Yes	Net coverage	/	/	Link Here
Bulgaria	/	No	/	/	No	No	/	/	Link Here
Croatia	2023	1 HT	/	/	Yes	Yes	2	1	Link Here
Cyprus	/	No	/	/	No	No	/	/	Link Here
Czech Republic	/	No	/	/	No	Yes	389	/	Link Here
Denmark	2021	10	/	/	Yes	Yes	21	13	Link Here
Estonia	2024	1 Telia Eesti	/	/	Yes	Yes	2	1	Link Here
Finland	/	No	/	/	Yes	Yes	309	/	Link Here
France	/	No	/	/	No	No	/	/	Link Here
Germany	2020	1 Telekom Deutschland	/	/	Yes	Yes	2	1	Link Here
Greece	2022	1 OTE	/	/	No	No	/	/	Link Here
Hungary	2024	2	/	/	No	Yes	6	2	Link Here
Ireland	/	No	/	/	No	No	/	/	Link Here
Italy	/	No	/	/	No	Yes	2	/	Link Here
Latvia	2024	1 Tet	/	/	Yes	Yes	2	1	Link Here
Liechtenstein	/	/	2024	none	No	No	/	/	Link Here
Lithuania	2019	1 Telia LT	/	/	No	Yes	2	1	Link Here
Luxembourg	2019	1 POST Luxembourg	/	/	No	No	/	/	Link Here
Malta	/	No	/	/	No	No	/	/	Link Here
Netherlands	/	No	/	/	No	No	/	/	Link Here
Norway	/	/	2018	1 Telenor	No	No	/	/	N/A
Poland	2019	1 Orange PL	/	/	No	Yes	2	1	Link Here
Portugal	/	No	/	/	No	No	/	/	Link Here
Romania	/	No	/	/	No	No	/	/	Link Here
Slovakia	2016	1 Slovak Telekom	/	/	No	No	No	No	Link Here
Slovenia	2021	1 Telekom Slovenije	/	/	No	Yes	2	1	Link Here
Spain	2025	No	/	/	No	Yes	2	/	Link Here
Sweden	/	No	/	/	No	No	/	/	Link Here
Switzerland	/	/	2007	1 Swisscom	N/A	No	/	/	N/A
United Kingdom	/	/	/	No	No	No	/	/	Link Here

Physical infrastructure access (PIA)

	Number of EU countries with SMP		Number of non-EU countries with SMP		Is there product segmentation? (Yes/No)	Is there geographic segmentation?			Link to the decision regarding the mk notification
Country	Year of EC notification	No. of SMP operators	Year SMP operator	No. of SMP operators	(e.g. in terms of speeds, underlying infrastructure, according to usage etc.)	Yes/No	How many geographic markets identified?	How many regulated?	
Austria	/	No	/	/					
Belgium	/	No	/	/					
Bulgaria	2024	1 Vivacom Bulgaria	/	/					Link Here
Croatia	/	No	/	/					
Cyprus	/	No	/	/					
Czech Republic	/	No	/	/					
Denmark	/	No	/	/					
Estonia	2025	1 Telia	/	/	No	No	/	/	Link Here
Finland	/	No	/	/					
France	2023	1 Orange	/	/	No	No	/	/	Link Here
Germany	/	No	/	/					
Greece	/	No	/	/					
Hungary	/	No	/	/					
Ireland	2024	1 Eircom	/	/	No	No	/	/	Link Here
Italy	/	No	/	/					
Latvia	2024	1 Tet	/	/	No	No	/	/	Link Here
Liechtenstein	/	/	/	No					
Lithuania	/	No	/	/					
Luxembourg	/	No	/	/					
Malta	/	No	/	/					
Netherlands	/	No	/	/					
Norway	/	/	/	No					
Poland	/	No	/	/					
Portugal	2023	1 MEO	/	/	No	No	/	/	Link Here
Romania	/	No	/	/					
Slovakia	/	No	/	/					
Slovenia	/	No	/	/					
Spain	/	No	/	/					
Sweden	/	No	/	/					
Switzerland	/	/	N/A	N/A	N/A	N/A	/	/	N/A
United Kingdom	/	/	2021	1 BT	No	No	/	/	N/A

M_1/2014 Wholesale fixed voice call termination

Country	Number of EU countries with SMP		Number of non-EU countries with SMP		Is there geographic segmentation?			Link to the decision regarding the mk notification
	Year of EC notification	No. of SMP operators	Year SMP operator	No. of SMP operators	Yes/No	How many geographic markets identified?	How many regulated?	
Austria	/	No	/	/	/	/	/	Link Here
Belgium	/	No	/	/	/	/	/	Link Here
Bulgaria	/	No	/	/	/	/	/	Link Here
Croatia	/	No	/	/	/	/	/	Link Here
Cyprus	/	No	/	/	/	/	/	Link Here
Czech Republic	/	No	/	/	/	/	/	Link Here
Denmark	/	No	/	/	/	/	/	Link Here
Estonia	2019	13	/	/	/	/	/	Link Here
Finland	2003/ 2008	48	/	/	/	/	/	Link Here
France	/	No	/	/	/	/	/	Link Here
Germany	/	No	/	/	/	/	/	Link Here
Greece	2020	OTE and ANOs	/	/	/	/	/	Link Here
Hungary	2023	133	/	/	/	/	/	Link Here
Ireland	/	No	/	/	/	/	/	Link Here
Italy	2022	Telecom Italia (TIM) and ANOs	/	/	/	/	/	Link Here
Latvia	2023	36	/	/	/	/	/	Link Here
Liechtenstein	/	/	2020	3	No	/	/	Link Here
Lithuania	2019	7	/	/	/	/	/	Link Here
Luxembourg	2021	21	/	/	/	/	/	Link Here
Malta	2018	6	/	/	/	/	/	Link Here
Netherlands	2025	All fixed network operators	/	/	/	/	/	Link Here
Norway	/	/	2019	10	/	/	/	N/A
Poland	2019	191	/	/	/	/	/	Link Here
Portugal	2018	20	/	/	/	/	/	Link Here
Romania	/	No	/	/	/	/	/	Link Here
Slovakia	/	No	/	/	/	/	/	Link Here
Slovenia	/	No	/	/	/	/	/	Link Here
Spain	2024	87	/	/	/	/	/	Link Here
Sweden	2019	Telia and 21 ANOs	/	/	/	/	/	Link Here
Switzerland	/	/	2008	1 Swisscom	No	/	/	N/A
United Kingdom	/	/	2021	188	Yes	188	188	N/A

M_2/2014 Wholesale mobile voice call termination

Country	Number of EU countries with SMP		Number of non-EU countries with SMP		Is there geographic segmentation?			Link to the decision regarding the mk notification
	Year of EC notification	No. of SMP operators	Year SMP operator	No. of SMP operators	Yes/No	How many geographic markets identified?	How many regulated?	
Austria	/	No	/	/	No	/	/	Link Here
Belgium	/	No	/	/	No	/	/	Link Here
Bulgaria	/	No	/	/	No	/	/	Link Here
Croatia	/	No	/	/	No	/	/	Link Here
Cyprus	/	No	/	/	No	/	/	Link Here
Czech Republic	/	No	/	/	No	/	/	Link Here
Denmark	/	No	/	/	No	/	/	Link Here
Estonia	2019	3	/	/	No	/	/	Link Here
Finland	2015	4	/	/	No	/	/	Link Here
France	/	No	/	/	No	/	/	Link Here
Germany	/	No	/	/	No	/	/	Link Here
Greece	/	No	/	/	No	/	/	Link Here
Hungary	2020	6	/	/	No	/	/	Link Here
Ireland	/	No	/	/	No	/	/	Link Here
Italy	/	No	/	/	No	/	/	Link Here
Latvia	2022	5	/	/	No	/	/	Link Here
Liechtenstein	/	/	2020	3	No	/	/	Link Here
Lithuania	2020	7	/	/	No	/	/	Link Here
Luxembourg	2020	6	/	/	No	/	/	Link Here
Malta	2018	3	/	/	No	/	/	Link Here
Netherlands	2024	All 3 MNOs and all MVNOs	/	/	No	/	/	Link Here
Norway	/	/	2017	8	No	/	/	N/A
Poland	2021	4	/	/	No	/	/	Link Here
Portugal	2018	8	/	/	No	/	/	Link Here
Romania	/	No	/	/	No	/	/	Link Here
Slovakia	/	No	/	/	No	/	/	Link Here
Slovenia	/	No	/	/	No	/	/	Link Here
Spain	/	No	/	/	No	/	/	Link Here
Sweden	2020	14	/	/	No	/	/	Link Here
Switzerland	/	/	N/A	N/A	N/A	/	/	N/A
United Kingdom	/	/	2018	68	No	/	/	Link Here

M_18/2003 Broadcasting transmission services

Country	Number of EU countries with SMP		Number of non-EU countries with SMP		Is there product segmentation? (Yes/No) (e.g. in terms of speeds, underlying infrastructure, according to usage etc.)	Is there geographic segmentation?			Link to the decision regarding the mk notification
	Year of EC notification	No. of SMP operators	Year SMP operator	No. of SMP operators		Yes/No	How many geographic markets identified?	How many regulated?	
Austria	2024	1 ORS	/	/	Yes	No	/	/	Link Here
Belgium	2018	3	/	/	No	net.coverage	/	/	Link Here
Bulgaria	N/A	N/A	/	/	N/A	N/A	N/A	N/A	N/A
Croatia	N/A	N/A	/	/	N/A	N/A	N/A	N/A	N/A
Cyprus	2025	1 Velister	/	/	Yes	No	/	/	Link Here
Czech Republic	/	No	/	/	No	No	/	/	Link Here
Denmark	/	No	/	/	Yes	No	/	/	Link Here
Estonia	/	No	/	/	No	No	/	/	Link Here
Finland	2022	1 Digita	/	/	Yes	No	/	/	Link Here
France	2022	1 TDF	/	/	No	No	/	/	Link Here
Germany	/	No	/	/	Yes	No	/	/	Link Here
Greece	/	No	/	/	Yes	No	/	/	Link Here
Hungary	2020	1 AH	/	/	No	No	/	/	Link Here
Ireland	2021	2	/	/	Yes	No	/	/	Link Here
Italy	/	No	/	/	Yes	Yes	/	/	Link Here
Latvia	/	No	/	/	Yes	No	/	/	Link Here
Lithuania	/	No	/	/	Yes	No	/	/	Link Here
Luxembourg	/	No	/	/	Yes	net.coverage	/	/	N/A
Malta	/	No	/	/	Yes	No	/	/	Link Here
Netherlands	/	No	/	/	No	net.coverage	/	/	Link Here
Norway	/	/	/	No	Yes	net.coverage	/	/	N/A
Poland	2022	1 TP Emitel	/	/	Yes	No	/	/	Link Here
Portugal	/	No	/	/	No	No	/	/	Link Here
Romania	/	No	/	/	Yes	No	/	/	Link Here
Slovakia	/	No	/	/	No	No	/	/	Link Here
Slovenia	/	No	/	/	No	No	/	/	Link Here
Spain	2019	1 Cellnex	/	/	No	Yes	20	1	Link Here
Sweden	2019	1 Teracom	/	/	Yes	No	/	/	Link Here
Switzerland	/	/	N/A	N/A	N/A	N/A	/	/	N/A
United Kingdom	/	/	2016	2	Yes	Yes	/	/	Link Here

M_14/2003 Wholesale trunk segments of leased lines

Country	Number of EU countries with SMP		Number of non-EU countries with SMP		Is there product segmentation? (Yes/No) (e.g. in terms of speeds, underlying infrastructure, according to usage etc.)	Is there geographic segmentation?			Link to the decision regarding the mk notification
	Year of EC notification	No. of SMP operators	Year SMP operator	No. of SMP operators		Yes/No	How many geographic markets identified?	How many regulated?	
Austria	/	No	/	/	/	/	/	/	/
Belgium	/	No	/	/	/	/	/	/	/
Bulgaria	/	No	/	/	/	/	/	/	/
Croatia	2025	1 HT	/	/	No	No	/	/	Link Here
Cyprus	/	No	/	/	/	/	/	/	/
Czech Republic	/	No	/	/	/	/	/	/	/
Denmark	/	No	/	/	/	/	/	/	/
Estonia	/	No	/	/	/	/	/	/	/
Finland	/	No	/	/	/	/	/	/	/
France	/	No	/	/	/	/	/	/	/
Germany	/	No	/	/	/	/	/	/	/
Greece	2019	1 OTE	/	/	No	No	/	/	Link Here
Hungary	/	No	/	/	/	/	/	/	/
Ireland	/	No	/	/	/	/	/	/	/
Italy	/	No	/	/	/	/	/	/	/
Latvia	/	No	/	/	/	/	/	/	/
Lithuania	/	No	/	/	/	/	/	/	/
Luxembourg	/	No	/	/	/	/	/	/	/
Malta	/	No	/	/	/	/	/	/	/
Netherlands	/	No	/	/	/	/	/	/	/
Norway	/	/	/	No	/	/	/	/	/
Poland	/	No	/	/	/	/	/	/	/
Portugal	2010	2	/	/	Yes	Yes	3	3	Link Here
Romania	N/A	N/A	/	/	/	/	/	/	/
Slovakia	/	No	/	/	/	/	/	/	/
Slovenia	/	No	/	/	/	/	/	/	/
Spain	/	No	/	/	/	/	/	/	/
Sweden	/	No	/	/	/	/	/	/	/
Switzerland	/	/	/	No	N/A	No	/	/	N/A
United Kingdom	/	/	2019	Yes	Yes	Yes	3	3	Link Here

M_2/2007 (M8_2003) Call origination on fixed networks

Country	Number of EU countries with SMP		Number of non-EU countries with SMP		Is there product segmentation? (Yes/No) (e.g. in terms of speeds, underlying infrastructure, according to usage etc.)	Is there geographic segmentation?			Link to the decision regarding the mk notification
	Year of EC notification	No. of SMP operators	Year SMP operator	No. of SMP operators		Yes/No	How many geographic markets identified?	How many regulated?	
Austria	/	No	/	/	/	/	/	/	/
Belgium	/	No	/	/	/	/	/	/	/
Bulgaria	/	No	/	/	/	/	/	/	/
Croatia	/	No	/	/	/	/	/	/	/
Cyprus	/	No	/	/	/	/	/	/	/
Czech Republic	/	No	/	/	/	/	/	/	/
Denmark	/	No	/	/	/	/	/	/	/
Estonia	/	No	/	/	/	/	/	/	/
Finland	/	No	/	/	/	/	/	/	/
France	/	No	/	/	/	/	/	/	/
Germany	/	No	/	/	/	/	/	/	/
Greece	/	No	/	/	/	/	/	/	/
Hungary	/	No	/	/	/	/	/	/	/
Ireland	/	No	/	/	/	/	/	/	/
Italy	/	No	/	/	/	/	/	/	/
Latvia	/	No	/	/	/	/	/	/	/
Liechtenstein	/	/	2021	none	No	No	/	/	Link Here
Lithuania	/	No	/	/	/	/	/	/	/
Luxembourg	/	No	/	/	/	/	/	/	/
Malta	/	No	/	/	/	/	/	/	/
Netherlands	/	No	/	/	/	/	/	/	/
Norway	/	/	/	No	/	/	/	/	/
Poland	/	No	/	/	/	/	/	/	/
Portugal	/	No	/	/	/	/	/	/	/
Romania	/	No	/	/	/	/	/	/	/
Slovakia	/	No	/	/	/	/	/	/	/
Slovenia	/	No	/	/	/	/	/	/	/
Spain	/	No	/	/	/	/	/	/	/
Sweden	/	No	/	/	/	/	/	/	/
Switzerland	/	/	2008	1 Swisscom	No	No	/	/	N/A
United Kingdom	/	/	/	No	/	/	/	/	/

M_15/2003 Access and call origination on mobile networks

Country	Number of EU countries with SMP		Number of non-EU countries with SMP		Is there product segmentation? (Yes/No)	Is there geographic segmentation?			Link to the decision regarding the mk notification
	Year of EC notification	No. of SMP operators	Year SMP operator	No. of SMP operators	(e.g. in terms of speeds, underlying infrastructure, according to usage etc.)	Yes/No	How many geographic markets identified?	How many regulated?	
Austria	/	No	/	/	No	No	/	/	/
Belgium	/	No	/	/	No	No	/	/	/
Bulgaria	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Croatia	/	No	/	/	No	No	/	/	/
Cyprus	/	No	/	/	No	No	/	/	/
Czech Republic	/	No	/	/	No	No	/	/	/
Denmark	/	No	/	/	No	No	/	/	/
Estonia	/	No	/	/	No	No	/	/	/
Finland	/	No	/	/	No	No	/	/	/
France	/	No	/	/	No	No	/	/	/
Germany	/	No	/	/	Yes	No	/	/	/
Greece	/	No	/	/	No	No	/	/	/
Hungary	/	No	/	/	No	No	/	/	/
Ireland	/	No	/	/	No	No	/	/	/
Italy	/	No	/	/	No	No	/	/	/
Latvia	/	No	/	/	No	No	/	/	/
Lithuania	/	No	/	/	No	No	/	/	/
Luxembourg	/	No	/	/	No	No	/	/	/
Malta	/	No	/	/	No	No	/	/	/
Netherlands	/	No	/	/	No	No	/	/	/
Norway	/	/	2024	1 Telenor	Yes	No	/	/	N/A
Poland	/	No	/	/	No	No	/	/	/
Portugal	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Romania	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slovakia	/	No	/	/	No	No	/	/	/
Slovenia	/	No	/	/	No	No	/	/	/
Spain	/	No	/	/	No	No	/	/	/
Sweden	/	No	/	/	No	No	/	/	/
Switzerland	/	/	N/A	N/A	N/A	N/A	/	/	N/A
United Kingdom	/	/	/	No	No	No	/	/	/

M_7/2003 Minimum set of leased lines

	Number of EU countries with SMP		Number of non-EU countries with SMP		Is there product segmentation? (Yes/No)	Is there geographic segmentation?			Link to the decision regarding the mk notification
Country	Year of EC notification	No. of SMP operators	Year SMP operator	No. of SMP operators	(e.g. in terms of speeds, underlying infrastructure, according to usage etc.)	Yes/No	How many geographic markets identified?	How many regulated?	
Austria	/	No	/	/	/	/	/	/	/
Belgium	/	No	/	/	/	/	/	/	/
Bulgaria	/	No	/	/	/	/	/	/	/
Croatia	N/A	N/A	/	/	/	/	/	/	N/A
Cyprus	/	No	/	/	/	/	/	/	/
Czech Republic	/	No	/	/	/	/	/	/	/
Denmark	/	No	/	/	/	/	/	/	/
Estonia	/	No	/	/	/	/	/	/	/
Finland	/	No	/	/	/	/	/	/	/
France	/	No	/	/	/	/	/	/	/
Germany	/	No	/	/	/	/	/	/	/
Greece	/	No	/	/	/	/	/	/	/
Hungary	/	No	/	/	/	/	/	/	/
Ireland	/	No	/	/	/	/	/	/	/
Italy	/	No	/	/	/	/	/	/	/
Latvia	/	No	/	/	/	/	/	/	/
Lithuania	/	No	/	/	/	/	/	/	/
Luxembourg	/	No	/	/	/	/	/	/	/
Malta	/	No	/	/	/	/	/	/	/
Netherlands	/	No	/	/	/	/	/	/	/
Norway	/	/	/	No	/	/	/	/	/
Poland	/	No	/	/	/	/	/	/	/
Portugal	/	No	/	/	/	/	/	/	/
Romania	N/A	N/A	/	/	/	/	/	/	N/A
Slovakia	/	No	/	/	/	/	/	/	/
Slovenia	/	No	/	/	/	/	/	/	/
Spain	/	No	/	/	/	/	/	/	/
Sweden	/	No	/	/	/	/	/	/	/
Switzerland	/	/	2010	1 Swisscom	No	No	/	/	N/A
United Kingdom	/	/	2013	1 BT	Yes	Yes	2	1	Link Here