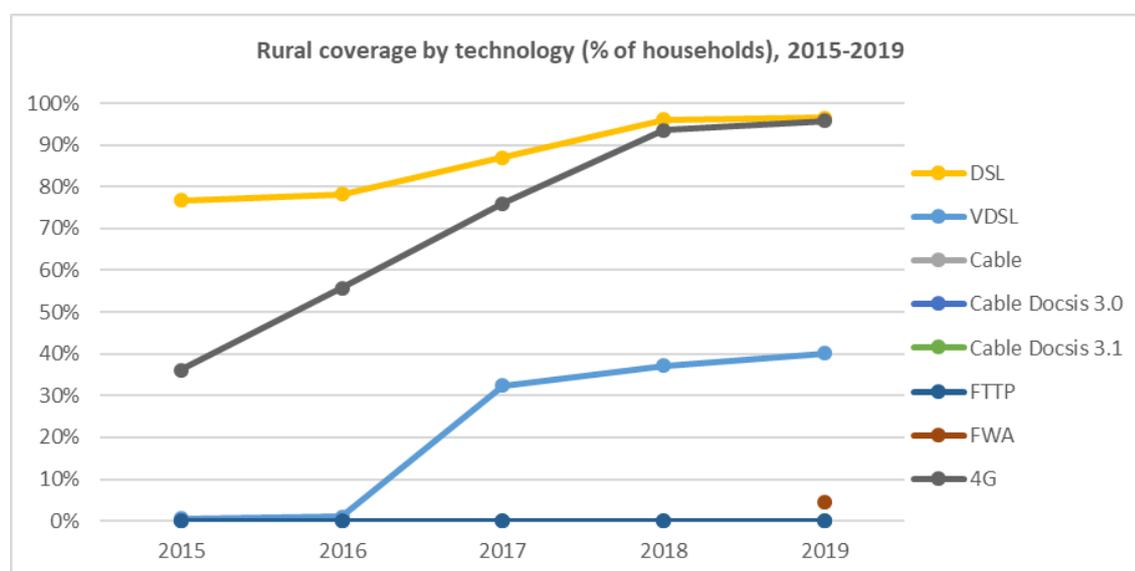
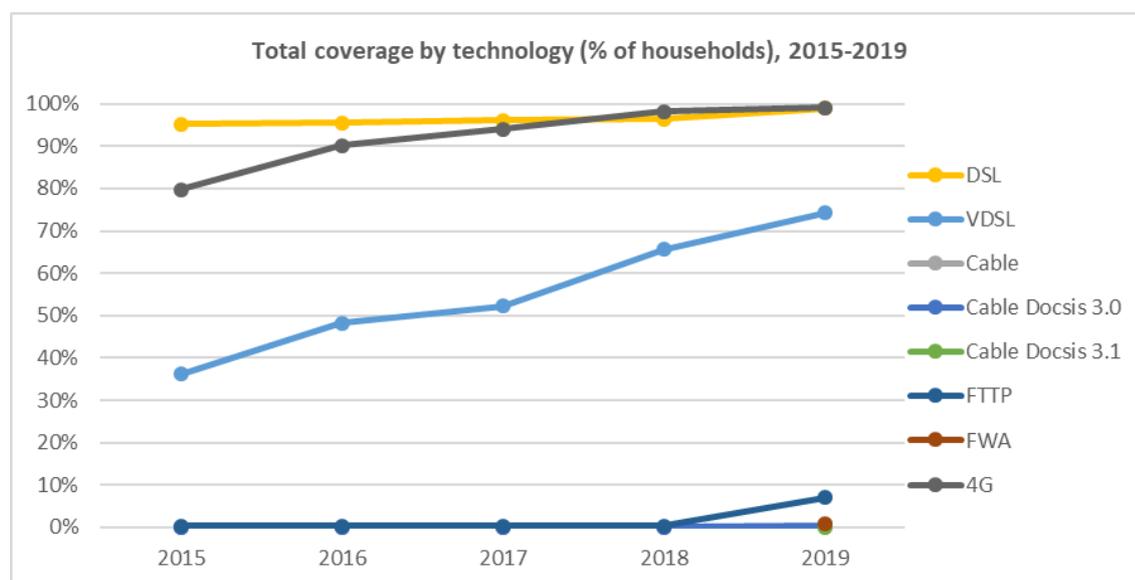


Greece

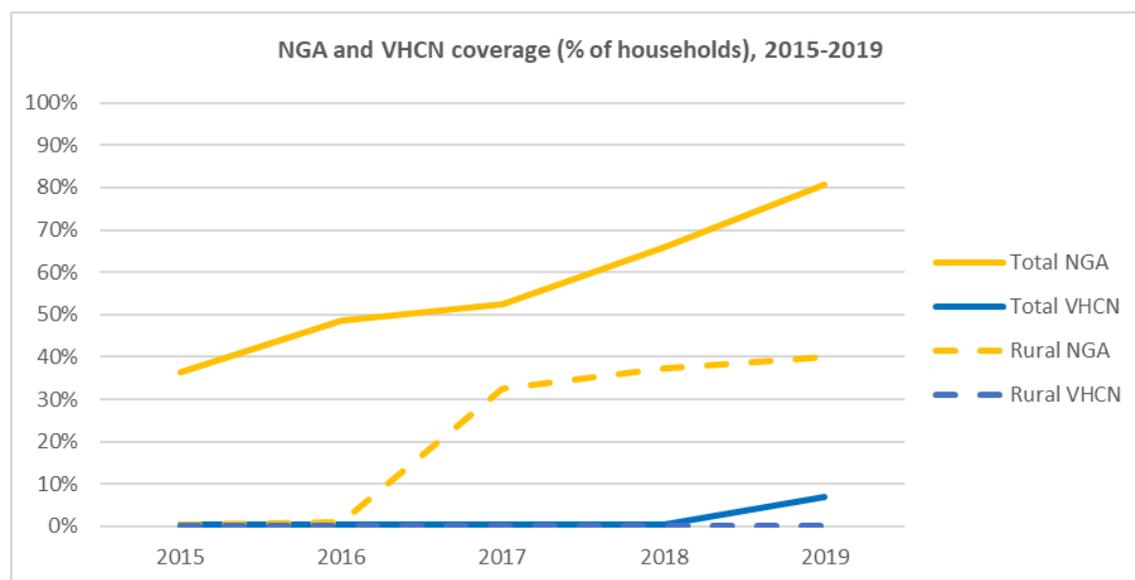


Source IHS and Point Topic, *Broadband coverage in Europe studies*

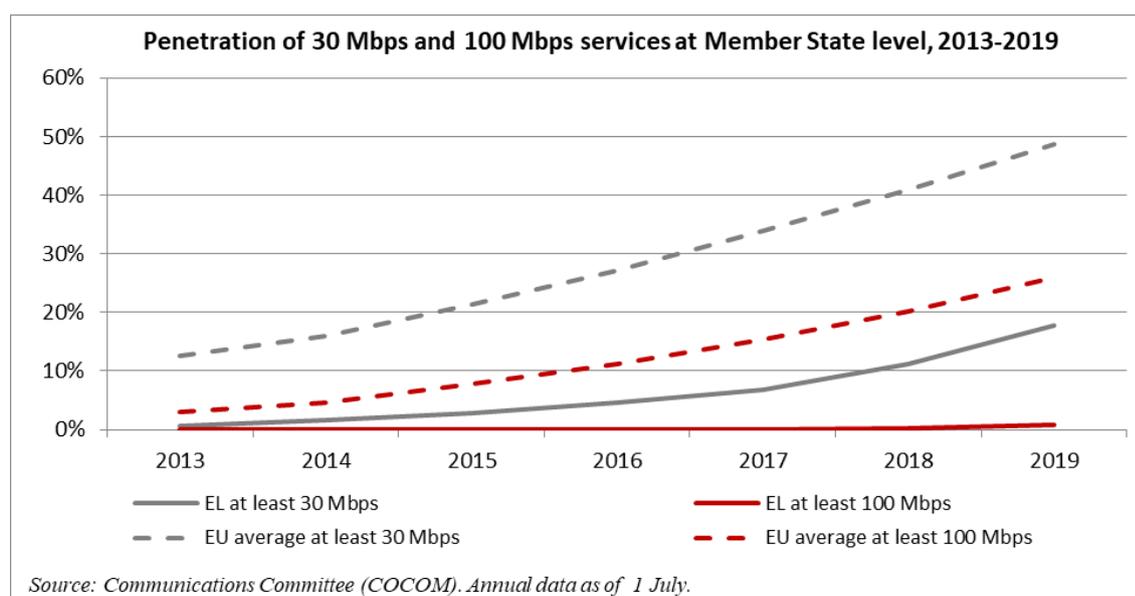
Greece is progressing at a very high pace in fast broadband (NGA) coverage showing a substantial progress of 15 percentage points in 2019 reaching 81%, only 5 percentage points below the EU average of 86%. Moreover, the country has finally started to engage in the deployment of very-high-capacity networks and its fixed very-high-capacity-network coverage reached 7% from 0% the previous year, though this is still far below the EU average of 44%. Total coverage of both DSL (99%) and VDSL (74%) in 2019 was above the EU average (at 91% and 59% respectively)¹. In addition, DSL rural coverage in 2019 (at 96%) was above the EU average (81%) and VDSL rural coverage (40%) almost reached the EU average (42%) in 2019. However, fibre deployment was only 0.4% of households in

¹ Based on coverage data per category of speed, Greece is progressing at a very high pace in broadband coverage >30 Mbps showing a substantial increase of 18.7 percentage points in 2019 to reach 79.7%, remaining slightly below the EU average of 83.3%. Greece shows a significant increase of 41.2 percentage points in broadband coverage >100 Mbps in 2019 to reach 41.6% (from 0.4% in 2018), but this still remains far below the EU average of 68.4%.

2018 and increased to only 7% in 2019. Greece performed better on 4G, with an overall coverage reaching the EU average (99%).



Source IHS and Point Topic, *Broadband coverage in Europe studies*

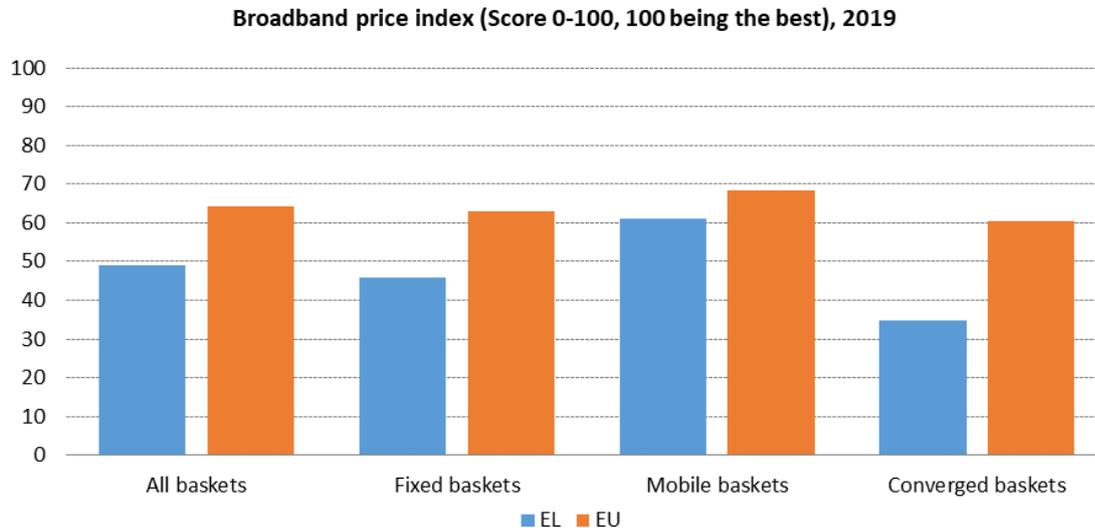


Source: Communications Committee (COCOM). Annual data as of 1 July.

The overall fixed broadband take-up is still progressing at a slow pace, reaching 76% in 2019 (up from 74% in 2018) remaining below, but close to the EU average (78%). Moreover, the penetration rate of at-least-30 Mbps broadband demonstrates increased by 6.4 percentage points (from 11.3 in 2018 to 17.7 in 2019). This increase could be attributed to the progressing network deployment and related market campaigns on high-speed internet and video-streaming products. However, the penetration rate of broadband of at-least-100 Mbps increased only slightly from 0.3% in 2018 to 0.8% in 2019.

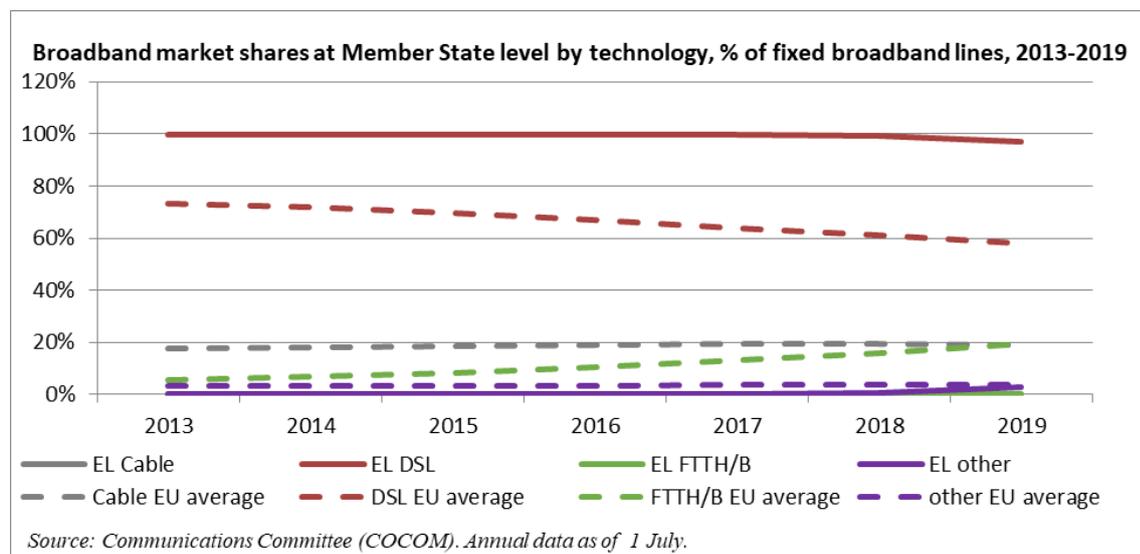
The transition to very-high-speed connections is slower than in other EU Member States, with Greece ranking last in 2019. This could be linked to the fact that Greece has a low coverage of very-high-capacity networks and to the late introduction of very-high-capacity networks in Greece, in comparison to other EU countries. Despite the 11-point increase in mobile broadband take-up, it currently has 86 subscriptions per 100 people, well below the EU average of 100 subscriptions per 100 people. The slow transition to very-high-capacity networks and the low penetration rate could be also

linked to prices, which remain relatively high compared to the EU average. Greece ranked last in 2018 and now 26th in the EU countries on the broadband price index. Prices in Greece for high-speed internet-baskets are higher than the EU average, whereas prices for lower-speed-baskets remain close to EU average.



Source: Commission services based on Empirica (Retail broadband prices studies)

More specifically, for fixed broadband (including converged fixed and mobile bundles), prices in Greece are close to or even below the EU average, for baskets below 30 Mbps. However they are substantially higher (20-50%) than the EU average for 30-100 Mbps baskets. Greece is the most expensive country for all baskets at 100-200 Mbps, but does not appear to supply the baskets above 200 Mbps. For mobile broadband, prices in Greece seem to be substantially lower than the EU average for low-data allowance baskets with no calls (second cheapest, 45% below the EU average for the 2 GB basket with no calls). This gap narrows as the allowance increases (almost on par with the EU average for the 20 GB basket with no calls). However, Greece is more expensive for most baskets that include voice calls and is one of the most expensive countries for the 20 GB basket with 100 or 300 calls.



DSL remains the dominant technology available to deliver broadband access services in Greece,

accounting for 97.1 % of the retail fixed broadband lines in the broadband market shares by technology. In Greece, there are neither cable networks nor competition from FTTH/B technology. Competition is mainly based on regulated access to the incumbent's (OTE), access network.

1. Progress towards a Gigabit Society²

Greece has set very high in its political agenda for the next four years the digital transformation of the state and the improvement of the digital status and the connectivity of the country. Greece is in the process of updating the National Broadband Plan (Law 4635/2019, Article 43) and finalising the “Digital Transformation Bible”, which will result in a structured, actionable and measurable digital strategy for Greece, with announcements expected in 2020.

The major broadband infrastructure project and Greece's main priority is the “Ultra-Fast Broadband” (UFBB) project, which aims to help the country fill the gaps on very-high-speed connectivity (in the supply side) and achieve its Gigabit Society targets. During the first stage of the tendering procedure, nine bidders expressed their interest; three of them are electronic communication service providers, whereas the rest are from the construction and the energy sector. Greece expects that this project will bring new wholesale-only players into the market and will foster cross-sector synergies. Despite the unprecedented circumstances imposed by the COVID-19 pandemic, the Ministry's ambitious plan is to stick to the initial schedule and sign the contracts in 2020.

The project's total budget is estimated at € 700 million of which € 300 million is public funding. Further to the Commission's approval of the measure under State aid rules on 31 July 2019, on 31 January 2020 the European Commission approved European financing for the UFBB project in amount of € 223 million, with over € 196 million from the European Regional Development Fund (ERDF) and € 27 million from the European Agricultural Fund for Rural Development (EAFRD) with the purpose of providing modern and fast internet access to users throughout the country. It is expected to cover almost 18% of the country (in terms of infrastructure availability) and to become operational as of May 2021.

The three operators (OTE, WIND, Vodafone), to which exclusive areas of NGA deployment have been allocated by the National Regulatory Authority (EETT)³, have accumulated delays on the initial plan for roll-out due to issues with power supply and permit granting. Although most of the NGA deployment under the vectoring deployment plan concerns implementation of FTTC/VDSL vectoring access networks, operators also deploy FTTH network to a lesser degree.

Regarding the deployment of NGA access networks in the context of the vectoring procedure for allocated outdoor cabinets and the approximate number of subscribers per technology, in March 2020 OTE has 15, 305 active outdoor cabinets for NGA and 2, 295, 750 active subscribers⁴. It plans to allocate 331 outdoor cabinets for VDSL by Q1 2021. However, OTE has no active FTTH cabinets and plans to allocate 397 outdoor cabinets for FTTH. Vodafone has 1, 646 outdoor cabinets for NGA already active and 346 planned, with 246, 900 subscribers for its active cabinets. Vodafone has the highest number of active FTTH outdoor cabinets (234), which it plans to increase by 475 more and it has 35, 100 active

² It is noted that statements regarding planned or potential State aid measures record intentions declared by Member States and do not pre-judge or pre-empt the assessment of such measures by the Commission under the relevant state aid rules. The DESI report is not meant to provide any assessment of the compliance of such measures with state aid rules and procedures.

³ C (2016) 8300 final concerning the Case EL/2016/1936 and Case EL/2016/1937 (Market review 3a (Vectoring decision)).

⁴ The data of EETT are calculated on the approximation that approximately 150 subscribers correspond to one cabinet.

FTTH subscribers. In March 2020, Wind had 1, 563 active outdoor cabinets for NGA and 234, 450 active subscribers, with the plan to allocate 1, 253 outdoor cabinets for NGA by Q1 2021. Wind also had 37 active FTTH cabinets and 5, 550 active subscribers, and plans to allocate 218 more FTTH outdoor cabinets.

In January 2020, the operators announced further plans to deploy NGA networks based on fibre (FFTH). According to information on additional FTTH deployment (i.e. outside the vectoring procedure) provided by the operators to EETT in March 2020, Vodafone has 99 outdoor cabinets already active in 2 LEXs and 14, 850 active subscribers⁵. In addition, for 2020, 78 outdoor cabinets in 3 LEXs are planned by Vodafone. As for OTE, as of March 2020, it has 1, 085 outdoor cabinets already active in 56 LEXs and it plans 1, 189 outdoor cabinets in 65 LEXs over the period 2020-2021. OTE has 162, 750 active subscribers. Wind is planning to add 202 outdoor cabinets in 6 LEXs for 2020. Finally, Forthnet does not intend to deploy NGA network in this timeframe.

Greece also considers a “Submarine Cable Scheme” to work towards its Gigabit Society targets for the Greek islands, to promote digital cohesion, and to create adequate backhauling facilities. The project may cover 43 submarine links running to a total length of 2, 400 Km and an international link between Rhodes and Cyprus. The project budget is estimated € at 100 million.

The “Superfast Broadband project” (SFBB)⁶, which aims to stimulate demand and support citizens in subscribing to a service at speeds from at least 100 Mbps, readily upgradable to 1 Gbps, is now progressing effectively, after resolving initial delays in absorption of vouchers. The total subsidy for a 24 months period is € 360, including the fixed initial connection fee. Greece has issued over 6,500 vouchers and the number of beneficiaries is expected to rise significantly as VHC availability improves. In February 2020, Greece extended the Superfast Broadband (SFBB) program to businesses, mainly small and medium-sized. The total budget of the programme is € 50 million per year.

Greece is one of the Member States that was successful in the WiFi4EU first call as it won 117 vouchers (about 40 % of those applied, 268 in total). The Ministry is preparing a complementary project (WiFi for GR), with enhanced technical specifications that aims to extend the public Wi-Fi availability. The project’s budget is € 15 million and it will be funded by ESIF (ERDF).

The new antenna licensing law⁷, voted as part of the recent Greek Growth Act, was welcomed by all involved parties (operators, EETT and EEKT) as an important step towards the simplification of the antenna licensing procedure and for the preparation for the 5G roll-out. The simplification and acceleration of the process will be achieved by providing authorization and installation of antenna constructions in two distinct stages, with one being a prerequisite for the next. In particular, for the installation and operation of new antenna constructions, the issuance of a construction permit by EETT is preceded and then the issuance of an antenna construction approval through the electronic building permits system provided for in the new town planning legislation follows. Digitalisation and transparency are achieved as the foreseen process is carried out electronically through the Electronic Application System and the Electronic Building Licensing System (e-licenses). Specifically, the

⁵ The data of EETT are calculated on the approximation that approximately 150 subscribers correspond to one cabinet.

⁶ DG COMP approved the extension of the project’s scope and duration until 31/3/2020 (Decision SA. 56599/5.5.2020).

⁷ The licensing of antenna constructions is mainly regulated by sections 20 to 38 (Part A of Chapter IA) of Law 4635/2019 (Government Gazette A 167) and EETT Decision 919/26 / 16-12-2019 “Regulation Antenna Licensing Offshore” (Government Gazette 4872 / B / 31-12-2019).

application for the relevant license from EETT is submitted through the SILYA system, while the application for approval for the installation of antenna construction is submitted through the e-licenses System. SILYA and the e-licenses System are interconnected and it is also envisaged to link SILIA with all other services involved in the licensing process.

Regarding the implementation of the Broadband Cost Reduction Directive, according to the Greek Law 4463/2017⁸, the full functioning of the Single Information Point (SIP) requires the adoption of secondary legislation by the Ministry of Digital Governance, yet to be adopted. There are still complaints and delays concerning the granting of permits by the Municipalities. To address these issues, the General Secretariat of Telecommunications and Post is preparing a new system to manage and coordinate the permit granting procedures. The system will operate as one-stop-shop and it is anticipated to facilitate the co-investment and the cross-/intra-sector synergies. The indicative timeframe for the concluding the contract for this new system and for starting the trial phase is Q3 2020.

2. Market developments

The merger between Vodafone-Panafon Hellenic Telecommunications Company S.A. and CYTA Hellas SA, following the acquisition of the latter by the first, was completed by the end of the first quarter of 2019. OTE completed the sale of its entire stake in Telekom Albania Sh.A. to Albania Telecom Invest AD, for a total gross equity consideration of € 50 million. Forthnet announced the signing of an agreement with Vodafone for acquiring wholesale access to the latter's radio network. This agreement enables Forthnet to offer retail mobile voice and data services as a Mobile Virtual Network Operator (MVNO). The initial duration of the agreement is four years after the commercial launch of the retail services mentioned above, which is planned for the first quarter of 2020. This agreement is based on the decision of EETT concerning the settlement of two disputes between Forthnet and OTE, which was notified to the Commission in November 2018. The disputes concerned the terms and conditions for Forthnet's access to the MNOs networks.

Another interesting development of the Greek mobile market, relates to the only sharing agreement of the market, which EETT is currently examining, after the parties notified to the authority the amendment/upgrade of their agreement to 4G (LTE) technology. It concerns the RAN-SHARING agreement, which was signed between number 2 and 3 of the Greek mobile operators, namely Vodafone-Hellas SA and Wind Hellas. EETT is examining the risks of any anti-competitive effects that may arise, as well as the fulfilment of the conditions of Article 1, par.3 of the Greek Law on Competition (Law 3959/2011) and Article 101, par.3 TFEU. There were three MNOs and one MVNO (CYTA) until the end of the first quarter of 2019, when CYTA merged with Vodafone and thereafter only three MNOs, OTE, Vodafone and Wind, present in the mobile market. OTE is the market leader in terms of revenues, active subscribers, traffic and mobile data.

The use of mobile networks was mainly characterized by a small increase of the domestic voice minutes, a considerable drop of SMS volume and a significant increase in the volume of data services. Between 2015 and 2018, OTE reported a slightly falling market share in mobile traffic, i.e. voice, and an increasing market share in mobile data.

There are five main operators active on the fixed market: the incumbent, OTE, and three alternative

⁸ According to Law 4463/2017, SIP is an online platform operated by the Ministry of Digital Governance. Issues related to the functioning of the Single Information Point shall be determined by a decision issued by the Ministry of Digital Governance.

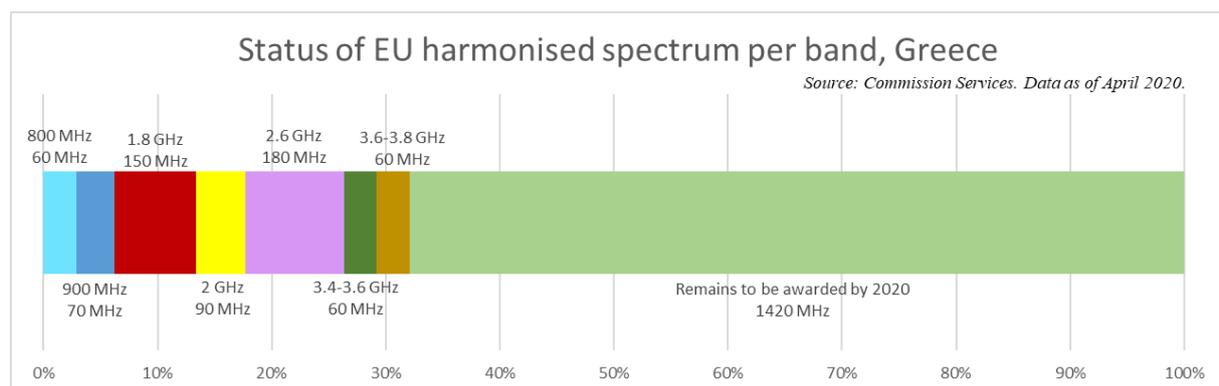
operators, Vodafone, Wind and Forthnet. Cyta remained an active fixed operator up until the end of the first quarter of 2019. The fixed telephony market was mainly characterized by a small increase in the total revenue, a slight decline in terms of subscriptions and a continuing drop regarding the fixed voice traffic. Between 2016 and 2018, OTE appeared to retain stable market share of fixed telephony and broadband networks. It is worth mentioning that over the same period OTE continued to upgrade its access network from PSTN to IP technology. At the end of 2018, 55% of OTE's access lines were VoB (managed VoIP).

Competition in bundles remains intense in Greece, which is ranked among the Member States with the highest bundles' penetrations. Wind launched the first Android TV subscription service in Greece and among the first in Europe in April 2018. Given the above, all four operators offer 3-play bundles with television (ie "FV+FBB+ TV") in the Greek market, while fixed-mobile bundles are provided by all except NOVA.

3. Regulatory developments

In 2019, the General Secretary of Telecommunications and Post set up a team composed of Ministry and EETT experts, to work together to implement Directive 2018/1972/EE, the European Electronic Communications Code (EECC). This task force has already produced a draft legislative proposal for the transposition. The public consultation on this draft proposal is expected to be launched in May 2020.

3.1. Spectrum assignment



The Ministry launched a new study regarding a 5G strategy, which will be finalised and published in Q3 2020. Greece ranks 18th on the 5G readiness indicator. On 17 December 2019, it published the decision on the modifications of the National Frequency Allocation Map concerning the TV broadcasters in the Government Gazette⁹. 32.06% of the total spectrum harmonised at EU level for wireless broadband has been assigned. Delays are expected in making the 700 MHz band available, as the final date for its use for broadcasting was 15 December 2020. The auction is expected to be held in 2020 and the 700 MHz spectrum will be available for use by the mobile service by mid-2021. The challenge is to facilitate the migration of DTT below 694 MHz, with the lowest possible impact to the public. Legal and technical issues may arise during the process of amending the licenses of the two DTT network providers (one private, DIGEA, and one public, ERT). On 6 February 2020, EETT launched the public consultation on the process of granting rights of use in the 700 MHz, 2 , 3.4 – 3.8 and 26 GHz bands, due to be completed on 30 April 2020. The Ministry is also assessing the scenario of running one tender for all 5G pioneer bands. A new antenna licensing law, voted recently as part of the new Greek Growth Act, constitutes an important step towards simplifying the antenna licensing

⁹ Government Gazette, FEK 4652/17 December 2019.

procedure and towards preparing for the 5G roll-out.

3.2. Regulated access (both asymmetric and symmetric)

EETT attributes current investments in NGA infrastructure to the 2016 Vectoring decision¹⁰ on the market for wholesale local access provided at a fixed location (market 3a of the 2014 Recommendation on relevant markets) and the market for wholesale central access provided at a fixed location for mass products (market 3b of the 2014 Recommendation on relevant markets). It regards the outcome as a success, considering the starting point of the market. However, the level of infrastructure competition is low and the incumbent, OTE, enjoys a high market share. Alternative operators had little success in getting areas assigned: the incumbent got 773 local exchanges against only 65 for Vodafone and Wind together.

All operators, including the incumbent, complained about the delay since 2016 of EETT to adopt a new Bottom-up Long Run Incremental Cost plus (BULRIC+) model for market 3a and 3b and underlined the necessity to have the final prices for Virtual Unbundled Local Access (VULA) as soon as possible, to be able to compete and progress with their investment plans and ensure the availability of their products. EETT sets as high priority to finalise this new cost model and set prices for VULA on that basis. The new cost model was notified to the Commission on 17 February 2020¹¹. OTE complained that the price level for copper (as nationally consulted) would be too low; whereas other operators welcomed the cost model. Vodafone expects that the price of copper will remain stable while the price for NGA access will go down. A full review of Markets 3a and 3b is envisaged to be notified in Q4 2020.

Concerning the analyses of the markets for leased lines and trunk segments of leased lines¹², a second public consultation was conducted until June 2019 and EETT finally notified the draft decision to the Commission on 21 June 2019¹³. On 19 July 2019, the Commission issued a serious doubts letter¹⁴ and opened a Phase II investigation regarding the notified draft decision of the wholesale terminating segments market, while providing comments on the wholesale trunk segments market. The Commission, had serious doubts as to the compatibility with EU law of EETT's draft measures concerning the proposed very light touch regulation for the area of Athens/Piraeus and the proposed exceptions to the margin-squeeze regulation regarding the market for wholesale terminating segments of leased lines. This area represents a very large segment of the market, reaching 84% of all leased lines offered in Greece. EETT, withdrew the notification, updated the market review, carried out a short consultation with the participants of the first two public consultations and notified the amended draft measure. The Commission urged EETT to finalise the new cost model in order to set prices for the above-mentioned markets. In the meantime, EETT is expected to notify to the Commission long term prices under the normal rules of Article 7(3), however this does not prevent EETT from taking urgent action under Article 7(9).

In December 2019, EETT launched a public consultation on market analysis of the Interconnection

¹⁰ C (2016) 8300 final concerning the Case EL/2016/1936 and Case EL/2016/1937 (Market review 3a (Vectoring decision)).

¹¹ EL_2020_2237.

¹² I.e. the market for wholesale high-quality access provided at a fixed location (market 4 of the 2014 Recommendation on relevant markets), the market for retail leased lines (market 7 of the 2003 Recommendation on the relevant markets) and the market for wholesale trunk segments of leased lines (market 14 of the 2003 Recommendation on the relevant markets).

¹³ CIRCABC://circabc.europa.eu/faces/jsp/extension/wai/navigation/container.jsp?FormPrincipal:_idcl=FormPrincipal:_id1&FormPrincipal_SUBMIT=1&id=e08f7147-f9cd-46e8

¹⁴ C (2019) 5523 final.

Markets (Market 1/2014 and Market 2/2007), which runs until 9 March 2020. EETT is planning to notify the Interconnection Markets still in Q2 2020. According to the draft measure that was subject to the consultation, EETT proposes deregulating Market 2/2007.

4. End-user matters

a. Complaints

According to the Consumer Ombudsman, the main category of consumer complaints for 2019 concerned the provision of Premium Rate Services (PRS) through the use of PSMS. There has been an increasing number of complaints related to fraud through PRS, most of which takes place via technologically advanced methods, with the use of hacked applications installed in smart mobile devices. EETT has been investigating this issue and is in cooperation with all the relevant Public Authorities involved. Since February 2020, EETT has amended the Code of Conduct for Premium Rate Services. According to this regulatory amendment, the enrolment in these specific services requires the explicit consent of end-users and in this way any arbitrary end-user charges are prevented¹⁵. Furthermore, EETT made website updates and media releases to raise public awareness of PRS issues.

b. Open Internet

According to EETT's binding regulatory decision on net neutrality¹⁶, the inclusion of speed values in contracts was planned for 5th October 2019. However, this deadline was prolonged for 12 months, following requests from most major Internet Service Providers (ISPs). The extension period should allow ISPs to finalize the methodology for estimating speeds and proceed to pilot implementations before announcing the speeds to the public. The extension was provided with EETT Decision 909/2/30-9-2019, which also contained an amendment to the existing Decision, stipulating that ISPs can also request the active participation of the subscriber for verifying a complaint about speeds, in order to reduce costs and avoid sending technicians for on-site checks. The majority of ISPs complained that the estimation of speeds especially for mobile is very complex from a technical perspective, very costly and not necessary, demanding a lot of time and resources to be implemented.

On 18 November 2019, EETT also issued (with EETT Decision 916/4/18-11-2019) an interim directive for Greek ISPs offering Internet Access Services with so-called "speed guarantees". The directive applies until the entry into force of the provisions regarding Internet speeds (on 5 October 2020), and includes transparency obligations that ISPs should adhere to regarding the provision of speed guarantees.

In November 2018, EETT initiated investigations against two mobile operators offering zero-rated offers. EETT informed the operators that their discriminatory practices would breach Article 3 par 1 and 3 of Regulation (EU) 2015/2120, and after exchanges with the operators all discriminatory practices were ceased by April 2019. In November 2018, EETT initiated investigation into the breach of Article 3 par 3 against one mobile operator for throttling video streaming traffic to a specific service. The grievance was that this throttling is not consistent with the objective quality requirements of this

¹⁵ EETT decision 923/12/17.02. 2020 published in Government Gazette as 651/B'/28-2-2020.

¹⁶ EETT issued a binding regulatory decision on net neutrality (EETT decision 876/7B/17-12-2018) in the area of Articles 4(3) and 5(1) of the Regulation and the BEREC Guidelines. The decision was published in the Government Gazette¹⁸ and entered into force on 05 February 2019. This decision sets out additional transparency requirements for Internet Service Providers (ISPs) and provides clarifications for the application of traffic management and commercial practices. It also entails a methodological framework for estimating speeds.

traffic category, and that congestion in the network cannot justify the application of such selective throttling. The operator ceased the practice. In November 2019, EETT sent notification letters to three operators regarding their application of the transparency provisions laid down in EETT Decision 876/7B/17-12-2018, and indicated shortcomings and points to improve the information provided to end-users. The operators were asked to amend their contract and website information within 30 days.

c. Emergency communications – 112

The Commission sent a letter of formal notice under Article 258 Treaty on the Functioning of the European Union on 25 July 2019, because the Greek authorities had continuously failed to ensure the correct implementation of Article 26 (3), (4) and (5), with regard to the implementation of equivalent access solutions for disabled end-users to emergency services and the timely provision of caller location information for emergency calls in Greece. However, progress was succeeded so far and the new call centre that receives 112 calls is fully operational since 01 January 2020. It ensures Cell ID based caller location information for all incoming calls throughout the entire country (mainland and islands) and automatic provision of the relative information. There are two 112 PSAPs both located in Athens (primary and secondary), where all the incoming calls are received and handled. Disabled end-users may contact the emergency services mainly through SMS and MMS to 112. In addition, the new 112 PSAP uses Cell Broadcast technology to send alert messages to mobile handsets of citizens in a specific area affected by natural or other kind of disasters. The new 112 PSAP has also the ability to send alert messages (via SMS or/and voice calls to fixed telephone connections) to pre-registered users.

5. Conclusion

Under its ambitious new digital strategy, Greece is working to address the delays in implementing the projects and in absorbing the funds allocated. Timely implementation of the “Ultra-Fast Broadband” (UFBB) project and creating the right conditions for investments will improve its digital competitiveness. Tackling the significant delays in the process for antenna permit granting under the new law and promoting 5G development will improve the country’s digital status. For the 5 G roll-out to be a success, it is crucial to implement the 5 G strategy and to assign the 5 G pioneer bands (700 MHz, 3.6 GHz and 26 GHz) without delay.