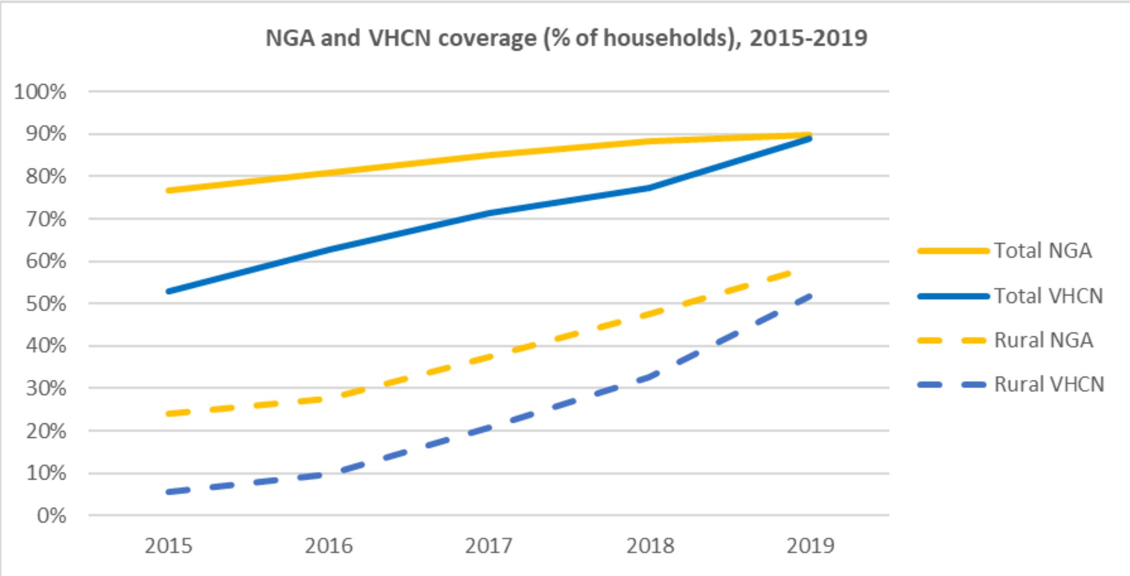
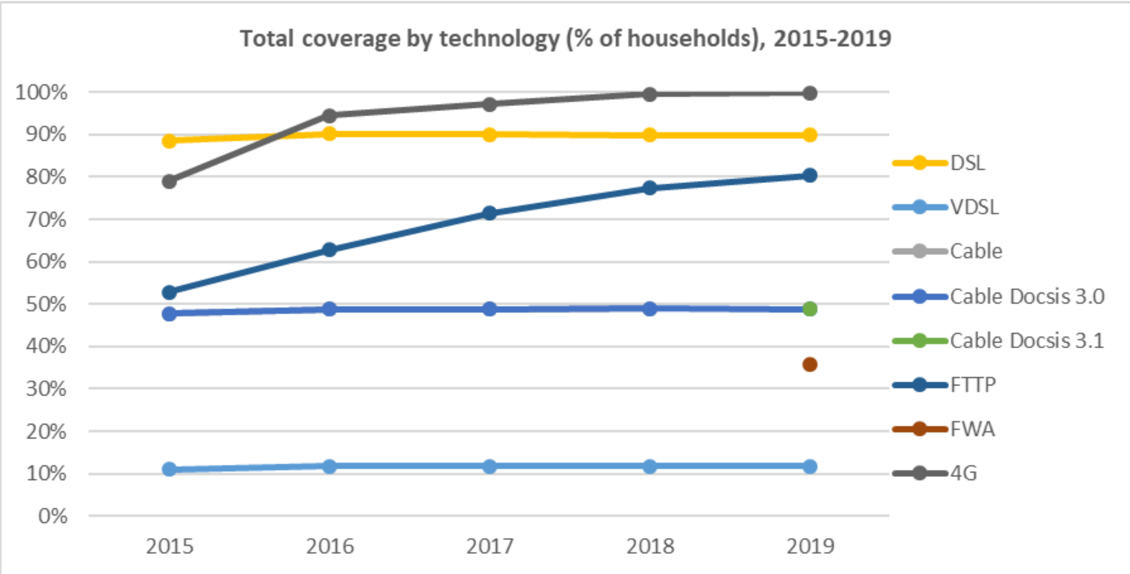
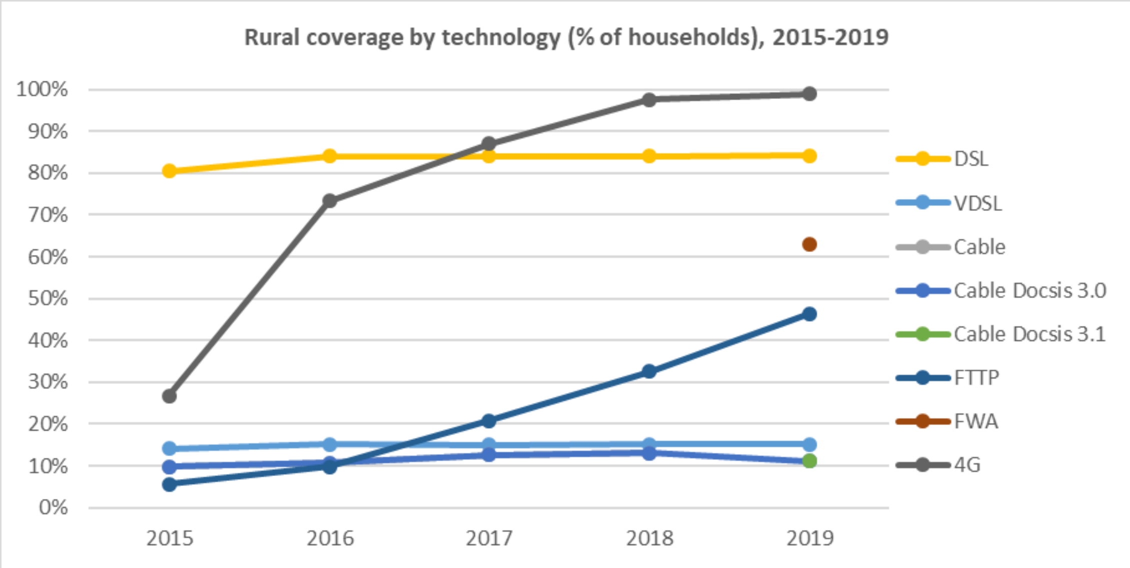
Spain

Spain performs particularly well when it comes to VHCN coverage. The deployment of FTTP networks continues to be an important feature of the Spanish digital market, covering 80% of households, above the EU average of 34%. Despite the significant differences between urban and rural areas, rural FTTP coverage in Spain reaches 46% of households, significantly above the rates of both EU rural and total FTTP coverage (21% and 34% respectively). Thanks to extensive fibre deployment and the upgrade of cable networks to DOCSIS 3.1, VHCN covers 89% of households, 12 percentage points (pps) above last year and well above the EU average (44%). NGA networks cover 90% of households, above the EU average (86%). Aggregate 4G coverage[1] reached 100%, 1 pp above the EU average (99%).



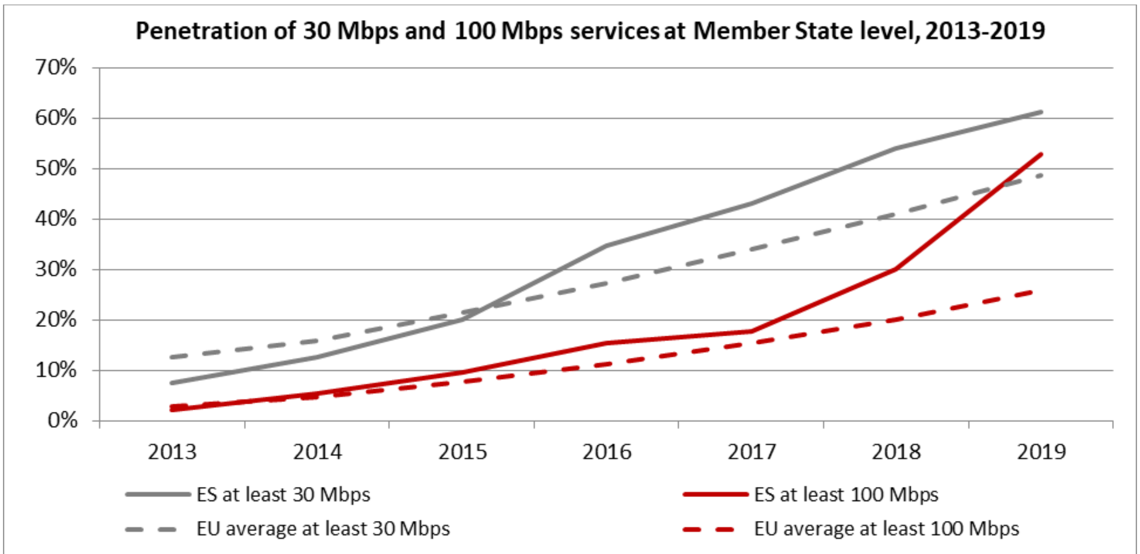


[1] The 4G coverage indicator used in the country chapters differs from the DESI indicator for 4G coverage. The former is an aggregate indicator, i.e. measures the coverage of all operators together. The latter is an average indicator, i.e. the sum of all coverages divided by the number of operators. Because of this difference, the two indicators may produce different results.



Source: IHS and Point Topic, Broadband coverage in Europe studies.

Overall fixed broadband take-up increased 1 pp (from 77% in 2018 to 78% in 2019). Take-up of broadband of at least 100 Mbps has grown significantly by 23 pps (from 30% in 2018 to 52.9% in 2019), well above the EU average (26%). The growth of the broadband market continues to be driven by the strong increase of the take-up of FTTH broadband connections.



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

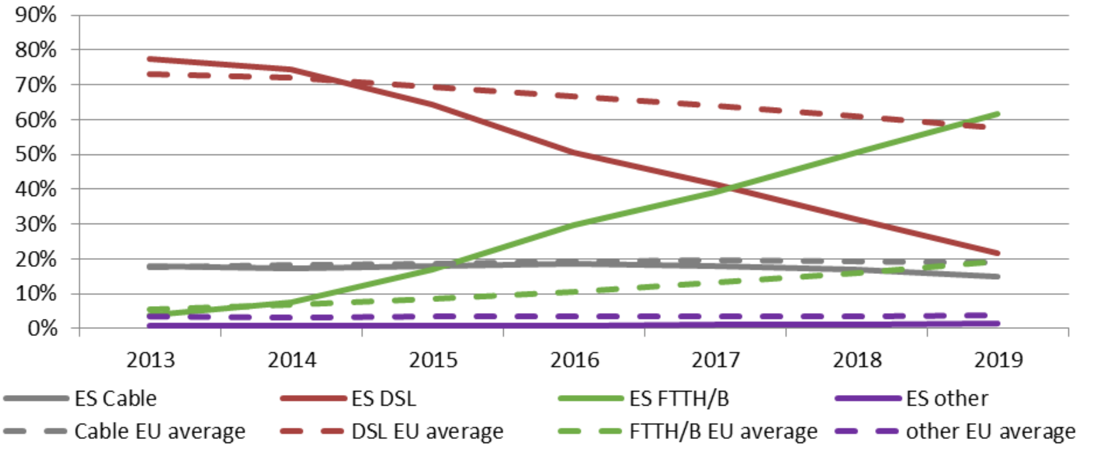
Moreover, at least 30 Mbps broadband take-up has increased 7 pps (up from 54.1% in 2018 to 61.2% in 2019), also well above the EU average of 48.7%.

There is a downward trend in the share of cable (from 16.8% to 15%) and DSL (from 31.2% in 2018 to 21.7% in 2019) in broadband access, and conversely a strong upward trend for FTTH/B (from 50.7% in 2018 to 61.6% in 2019), a reflection of the migration of customers to the new technology. As already observed in previous years, this growth was driven by the roll-out of FTTH networks by operators, which jointly amounted to 50.80 million accesses[2]. The Spanish competition regulator CNMC (*Comisión Nacional de los Mercados y la Competencia* - National Commission on Markets and Competition) reported that Telefónica holds the largest fibre network, with more than 222.68 million

[2] Information provided by CNMC.

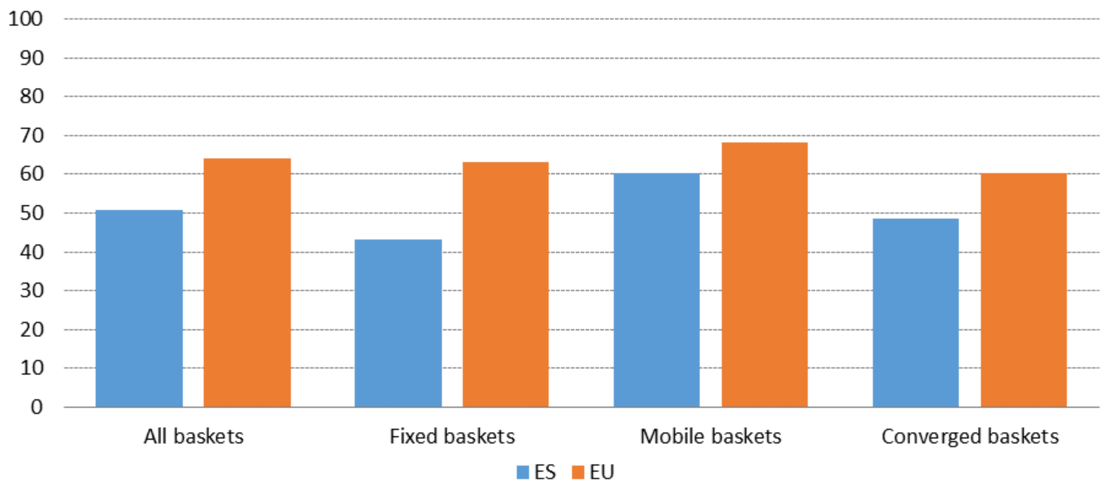
building units (BUs), followed by Orange with 14.61 million BUs. Between Q1 2018 and Q1 2019, Telefónica and Orange added around 1.89 and 1.31 million BUs respectively to their FTTH networks between Q3 2018 and Q3 2019. As in 2018, Másmóvil ranked first for fibre roll-out by adding almost 4.07 new BUs to its FTTH network between Q1 2018 and Q1 2019. Másmóvil´s FTTH network reached 8.84 million BUs in Q1 2019 thanks to the co-investment agreement signed with Orange. By contrast, neither Vodafone nor Euskaltel significantly expanded the footprint of their networks. Vodafone´s NGA network comprised 3.6 and 7.6 million BUs passed with FTTH and HFC respectively. Euskaltel covered 2.3 million BUs with its HFC network in the northern regions of the Basque Country, Asturias and Galicia; its FTTH network is marginal with only 284K accesses.

Broadband market shares at Member State level by technology, % of fixed broadband lines, 2013-2019



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

Broadband price index (Score 0-100, 100 being the best), 2019



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

Prices in Spain are higher than the EU average, ranking 25th in DESI, but do not seem correlated to take-up. On the contrary, take-up of at least 100 Mbps networks grew significantly. Prices for convergent bundles, the most representative method used by operators to sell electronic communications services in the country, are 19 pps higher than the EU average.

1. Progress towards a Gigabit Society[3]

The national programme for the extension of next-generation broadband networks[4] continues to provide financial support for the roll-out of broadband networks in underserved areas. The 2019 call (through the current PEBA-NGA scheme) awarded €140 million in grants to FTTH network deployment projects to provide coverage to half a million homes. Spain also notified to the European Commission a modification of its PEBA-NGA €400 million scheme for 2020-2022 to include grey areas, by rolling out infrastructure capable of providing speeds of 300 Mbps symmetrical, upgradeable to 1Gbps symmetrical. On 10 December 2019, the European Commission declared the new Spanish Scheme compatible with EU State aid rules[5][6].

By means of Ministerial Order ECE/1166/2018 of 29 October, Spain approved the plan[7] to provide coverage at a minimum speed of 30 Mbps to at least 90% of the inhabitants of settled areas whose population is less than 5,000. According to the Ministry of Business Affairs and Digital Transformation (*Secretaria de Estado de Telecomunicaciones e Infraestructuras Digitales*, SETID), broadband coverage after execution of this plan is equal to 94.3%, according to the methodology used in the national report.

Following the publication of the 5G national plan for 2018-2020, SETID guaranteed the possibility of using certain frequency bands for 5G pilots and established the regulatory basis for granting subsidies to 5G technology pilot projects. These pilot projects will use spectrum in the 700 MHz, 3.6 and 26 GHz bands. On that legal basis, Red.es awarded two 5G pilot projects using the 3.6 and 26 GHz bands[8] in April 2019, and in October 2019 it published a new call for tenders for eleven 5G pilot projects, for a budget of €45 million[9].

With regard to private investment in Gigabit connectivity, CNMC reported that in September 2019 the total number of FTTH, FTTN and HFC-DOCIS 3.0 accesses in Spain amounted to 61.5 million. The growth of NGA broadband network between Q1 2018 and Q3 2019 was slightly lower than the growth registered during the same period in 2016, 2017 and 2018.

Two new commercial agreements for co-investment and wholesale access agreements and three new wholesale access agreements were signed in 2019[10].

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[3] 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.

[4] (‘Programa de Extensión de la Banda Ancha de Nueva Generación’, PEBA-NGA http://www.mincotur.gob.es/PortalAyudas/banda-ancha/Paginas/Index.aspx

[5] https://ec.europa.eu/competition/state_aid/cases1/201952/282618_2120578_133_2.pdf

[6] The new terms and conditions that set up the regulations of this State aid scheme were approved by ministerial order on 14 April. See: http://www.mineco.gob.es/portal/site/mineco/menuitem.ac30f9268750bd56a0b0240e026041a0/?vgnextoid=df4985eb8c771710VgnVCM1000001d04140aRCRD&vgnextchannel=864e154527515310VgnVCM1000001d04140aRCRD.

[7] The holders of public concessions in the 800 MHz band (Telefónica, Orange and Vodafone) should meet this obligation to provide this coverage, in accordance with the technological neutrality principle.

[8] https://www.red.es/redes/es/que-hacemos/pilotos-5g

[9] https://www.red.es/redes/es/que-hacemos/pilotos-5g

[10] (i) In February 2019, Telefonica and Másmóvil signed a wholesale access agreement (VULA type product and bitstream NEBA local NEBA FTTH respectively); (ii) in March 2019, Telefonica and Vodafone signed Addendum I to their wholesale access agreement (VULA type product and bitstream NEBA local NEBA FTTH respectively); (iii) in April 2019 Vodafone and Orange signed a co-investment (reciprocal access) and wholesale access agreement; (iv) in June 2019 Telefónica and DIGI mobil signed Addendum I to their wholesale access agreement (bitstream-

The Broadband Cost Reduction Directive (BCRD), Directive 2014/61/EU[11], has had a very limited impact in Spain. This is probably due to the fact that access to the physical infrastructure of the significant market power operator (Telefonica) has been available since 2008 at cost-oriented prices. During 2019 CNMC settled five disputes concerning BCRD. Three disputes concerned the provision of access to physical infrastructure and two disputes concerned access to information on physical infrastructure. In April 2019, the government approved a regulation on the functioning of the single information point (SIP)[12], which is now operational[13].

2. Market developments

CNMC reported that the three big nationwide convergent players (Telefonica, Orange and Vodafone) still control most of the market (86% in terms of broadband lines), but their joint share continued to go down, decreasing by more than 3 pps between Q1 2018 and Q3 2019. This is mainly due to the share gained by Másmóvil ahead of Euskaltel, which plans to expand its footprint across Spain using the Virgin brand.

CNMC reported that for the first time Telefonica´s share fell below the threshold of 40%. Its share in the market encompassing only FTTH and HFC broadband lines is also lower (35%). The difference is due to the stronger position of Vodafone and, to a lesser extent, Euskaltel, i.e. to the presence of HFC cable-based offers. The competitive pressure from the commercial strategy of Másmóvil and other operators (namely Digi Mobile) constrained retail broadband prices.

The three big operators have maintained the multi-brand strategy to address different segments: (i) the low end segment using flanker brands (such as Telefónica's O2, Orange's Amena, SIMYO, Jazztel and Vodafone's Lowi) and no frills offers and (ii) the mid-high end segment using their own brands and differentiated and comprehensive offers to meet all the communication needs of households.

In April 2019 Vodafone launched an unlimited tariffs offer, and in June 2019 it launched commercial 5G services in 15 Spanish cities[14] with approximately 50% coverage. In 2020, two more cities have been added[15].

Bundled offers continue to shape the broadband market. In Q1 2019, more than 97% of the broadband lines were commercialised on a bundle basis. Convergent bundles account for more than 80% of the fixed broadband market and almost half of them are 5-Play.

The main driver of demand for audiovisual content is football. Only Telefonica and Orange are offering all football content this season along with Mediaset, which also started to offer football content through its OTT Mitele. As some operators informed, the cost-sharing model imposed on the

NEBA FTTH); and (v) in October 2019, Orange and Másmóvil signed Addendum III to their co-investment (one way) and wholesale access agreement.

[11] Directive 2014/61/EU of the European Parliament and the Council of 15 May 2014 on measures to reduce the cost of deploying high-speed electronic communications networks (*OJ L 155, 23.5.2014, p. 1–14*).

[12] Order ECE/529/2019 of 26 April 2019. https://www.boe.es/buscar/doc.php?id=BOE-A-2019-6997

[13] https://sedeaplicaciones.minetur.gob.es/piu

[14] Madrid, Barcelona, Valencia, Málaga, Sevilla, Pamplona, Bilbao, Zaragoza, Logroño, Vitoria, San Sebastián, Santander, Gijón, A Coruña and Vigo.

[15] Benidorm and Badajoz. http://www.saladeprensa.vodafone.es/c/notas-prensa/np_primera_llamada_5G_SA/

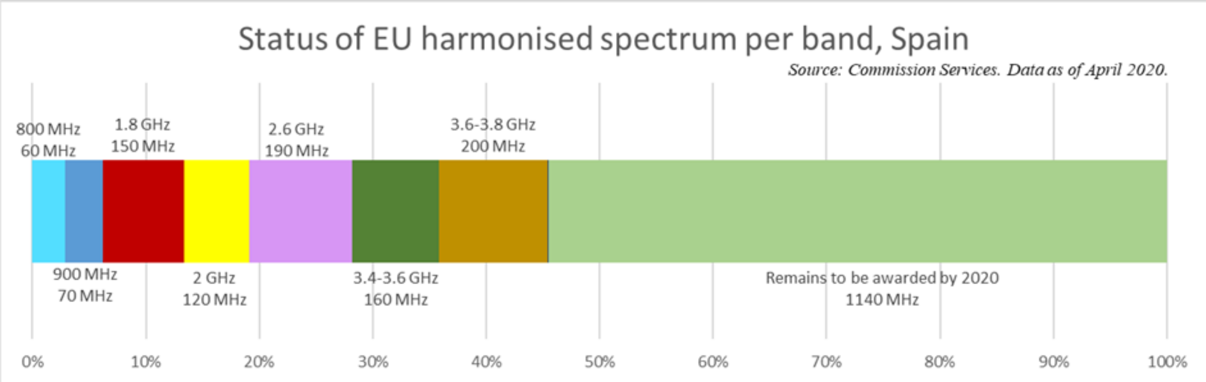
incumbent as part of merger commitments[16] has increased competition in movies and TV shows[17] but not in premium sport channels[18]. It was reported that the decision to extend, adapt or remove Telefonica/DTS commitments (in force until April 2020) would be delayed due to the COVID-19 pandemic[19].

OTT services have affected consumer demand, replacing traditional text messages (SMSs) and multimedia messaging services (MMSs). OTTs have had very little effect on MNO's voice services, mainly because of the widespread practice of retailing unlimited call tariffs.

The business market, which operators address with complex customised offers, is not as dynamic as the mass market, which comprises both residential and business customers who want standardised products. Telefonica's market share is slightly decreasing but is still very high (above 60%).

3. Regulatory developments

3.1. Spectrum assignment



In Spain, 45% of the spectrum harmonised at EU level for wireless broadband has already been assigned. Regarding the 700 MHz band, in June 2019[20], the government approved a new national technical plan for Digital Terrestrial Television (DTT technical plan) as well as necessary regulatory measures for the release of the 700 MHz band. In June 2019, SETID published a draft proposal for managing the 700 MHz, 1.5 and 26 GHz bands in which general aspects of the auctions where consulted[21]. The 700 MHz band was expected to be awarded in May 2020[22], but due to the COVID-19 pandemic the auction process has been delayed. SETID reported that the market has shown little interest in the 26 GHz band as there is currently spectrum oversupply. Spain decreased four positions

[16] Telefonica / DTS merger commitments: CNMC's approval of the Telefonica and DTS merger was subject to Telefonica making several commitments. These included that Telefonica make its exclusive content available to other ECS operators through a wholesale channel offering, with wholesale prices (cost per subscriber) being simultaneously cost-oriented and replicable by alternative operators.
[17] Price set at a variable cost per subscriber.
[18] A minimum guaranteed cost (MGC) distribution mechanism is in place.
[19] Deadlines have been suspended, as laid down in Royal Decree 463/2020 of 14 March in which Spain declares the State of Alarm due to the COVID-19 pandemic. https://www.boe.es/diario_boe/txt.php?id=BOE-A-2020-3692
[20] Approved by means of Royal Decree 391/2019 of 21 June 2019. https://www.boe.es/buscar/act.php?id=BOE-A-2019-9513.
[21] https://avancedigital.gob.es/en-us/Participacion/Paginas/Cerradas/modelo-gestion-bandas-frecuencias.aspx
[22] http://www.mineco.gob.es/portal/site/mineco/menuitem.ac30f9268750bd56a0b0240e026041a0/?vgnextoid=691e2c9571c21710VgnVCM1000001d04140aRCRD&vgnextchannel=864e154527515310VgnVCM1000001d04140aRCRD

in the 5G readiness indicator[23] (from 6th to 10th), as it has not assigned any additional spectrum in the 5G pioneer bands.

The entire 3.6 GHz band is now available to operators at 5G conditions. Defragmentation of the entire 3.4 to 3.8 GHz band is necessary, as Vodafone is the only operator with contiguous spectrum (90 MHz). Different portions of spectrum have several right holders and different expiry dates, which makes the defragmentation process complicated. Moreover, there are military radars using 2x20 MHz[24] (3480-3500 MHz and 3580-3600 MHz) in the band, which are expected to free the band in the short to medium term.

CNMC expected that in the short to medium term the volume of frequencies used for 2G and 3G will be reduced and thus concentrated in the 900 MHz band. 1800 MHz and 2100 MHz bands will be used fully by LTE. However, as M2M services are offered mostly using 2G networks, operators seem to be planning to leave at least one of these old technologies deployed.

3.2. Regulated access (both asymmetric and symmetric)

On 17 July 2019 and 25 July 2019, CNMC adopted the final measures maintaining regulation of the wholesale markets for broadcasting transmission services to deliver broadcast content to end users (market 18 of the 2003 Recommendation on Relevant Markets[25]) and voice call termination on individual fixed telephony networks[26] (market 1 of the 2014 Recommendation on Relevant Markets[27]) respectively.

Regarding broadband markets, operators are asking for a review of markets 3[28] and 4[29] of the 2014 Recommendation on Relevant Markets, arguing that infrastructure competition is not reflected in the current regulatory decisions. CNMC reported that the European Commission is expected to receive

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[23] The 5G spectrum readiness indicator is based on the amount of spectrum already assigned and available for 5G use by 2020 within the 5G pioneer bands in each EU Member State. For the 3.4-3.8 GHz band, this means that only licences aligned with the technical conditions in the Annex to Commission Decision (EU) 2019/235, are considered 5G-ready. For the 26 GHz band, only assignments aligned with the technical conditions in the Annex to Commission Implementing Decision (EU) 2019/784 are taken into account. By contrast, the percentage of harmonised spectrum takes into account all assignments in all harmonised bands for electronic communications services (including 5G pioneer bands), even if this does not meet the conditions of the 5G readiness indicator.

[24] According to SETID, some test done in the band concluded that the effect of military radars on electronic communications stations is very limited. Radars should migrate to another frequency band before 1 January 2023 (https://avancedigital.gob.es/es-es/Participacion/Documents/proyecto-orden-modifica-orden-cnaf/Proyecto-Orden-Modif-CNAF.pdf. Draft Order for the amendment of the National Table of Frequency Allocation (currently under public consultation).

[25] Commission Recommendation of 11 February 2003 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communication networks and services (*OJ L 114, 8.5.2003, p. 45–49*).

[26] The CNMC updated the fixed termination rates applied by all fixed operators, set until then at 0.0817 eurocents/min. The new FTR are: 0.0643 in 2019, 0.0593 in 2020 and 0.0545 from 2021 until the euro tariff enters into force.

[27] Commission Recommendation of 9 October 2014, on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services (OJ L 295, 11.10.2014, p. 79–84).

[28] Market 3(a) Wholesale local access provided at a fixed location and Market 3(b) wholesale central access provided at a fixed location for mass-market products.

[29] Market 4 Wholesale high-quality access provided at a fixed location.

notification after summer 2020[30], but there is a chance this will be delayed due to the COVID-19 pandemic.

According to the analysis of broadband markets, a bitstream FTTH service (NEBA) has also been available in areas where only the VULA service (NEBA local) was mandated, albeit temporarily as long as the latter was not effectively available. In May 2019, CNMC verified that the VULA service (NEBA local) launched in January 2018 was correctly implemented, so that the transitory bitstream service (NEBA transitorio) could be discontinued. Therefore, the regulated NEBA local is currently available nationally, with the exception of the so-called ultrafast broadband (UFB) municipalities[31], whereas the regulated NEBA is available in those parts of the country defined as non-competitive in the 2016 market review. The VULA service (NEBA local) is being enhanced[32] with a multicast frame replication functionality, which will optimise transmission of IPTV.

CNMC set clear rules on copper switch-off whereby Telefonica is allowed to discontinue wholesale and retail services based on the copper network in locations where fibre can be used instead. Currently, 1,805 sites are in some stage of the decommissioning process, of which 402 non-LLU sites had been decommissioned by the end of 2019 after a 12-month transitory period. More than 800 LLU sites are already scheduled for decommissioning after a five-year period.

4. End-user matters

a. Complaints

SETID reported that the main sources of complaints have been pricing and billing (30.9%) and contract termination (21.4%). In relation to the service involved, bundled services received the largest number of complaints (58.7%), followed by fixed services (22 %) and mobile services (18.4%)[33].

b. Net neutrality

Article 6 of Regulation (EU) 2015/2120[34] is currently transposed in Spain by means of general penalty provisions provided in the General Telecommunications Act. Notwithstanding the above, SETID committed to inflict specific roaming and net neutrality penalties in case of infringement while transposing the European Electronic Communications Code[35].

c. Roaming

As CNMC informed, at wholesale level, prices are decreasing significantly below the regulated caps, suggesting competition at the wholesale level. The introduction of RLAH seems to have led to a significant increase in roaming traffic, and wholesale operators are competing for it.

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[30] A public consultation is expected early 2020.

[31] There are 66 UFB municipalities, including Madrid, Barcelona and several other big Spanish cities, that cover 35% of the Spanish population.

[32] Decision of April 2019. Implementation was ready in December 2019. A three-month test phase with real customers is to take place in 2020, prior to commercial deployment.

[33] The most recent data available is from 2018.

[34] Regulation (EU) 2015/2120 of the European Parliament and of the Council of 25 November 2015 laying down measures concerning open internet access and amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services and Regulation (EU) No 531/2012 on roaming on public mobile communications networks within the Union (Text with EEA relevance), *OJ L 310, 26.11.2015, p. 1–18.*

[35] Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code (*OJ L 321, 17.12.2018, p. 36–214)*

d. Emergency communications – 112

In Spain, the autonomous communities are in charge of managing calls to 112. There are nineteen 112 public safety answering points (PSAPs) that depend on regional governments which manage 112 emergency communications, including access to emergency service for disabled end-users. In January 2020, to ensure equivalent access to emergency services for disabled end-users, the Ministry of Interior deployed an 'Alertcops' application[36] available throughout Spain.

e. Universal service

In January 2020, universal service obligations for the provision of public payphones were extended until 1 January 2022[37]. SETID supports the service's suppression, but political instability prevented it from passing the law to eliminate the service, which is expected for the end of the year. CNMC also agrees that this service should be suppressed, given the progressive abandonment of its use reflected in the decline in call traffic, income and territorial distribution of its use.

5. Other issues

In Spain, there are currently no plans to migrate to digital radio broadcasting. In practice, the digital radio market is not fully developed in Spain. Although several digital radio licenses were awarded in 2000, there is almost no audience for these channels.

6. Conclusion

Spain is one of the top performers in the roll-out of VHC networks as well as the take up of ultrafast broadband connections of at least 100 Mbps. Deployment is driven by commercial investment made by several telecom operators; a regulatory framework focused on supporting deployments through effective regulated duct-access and geographically differentiated access obligations and an ambitious national strategy that provides subsidies in sparsely populated and rural areas is also. The ground is being prepared for 5G deployment, with several pilot projects assigned and under way, with pioneer spectrum assignment well under way and with the 700 MHz auction initially expected in spring 2020[38]. Concerning equivalent access to emergency services for disabled end-users, Spain has deployed an accessibility solution that is available throughout the country.

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[36] https://alertcops.ses.mir.es/mialertcops/en/index.html
http://www.proteccioncivil.es/sala-de-prensa/noticias/-/asset_publisher/UP61ywtci2Co/content/30-12-2019-interior-actualiza-alertcops-para-facilitar-el-acceso-de-personas-con-discapacidad-auditiva-a-los-servicios-de-emergencia

[37] https://www.boe.es/diario_boe/txt.php?id=BOE-A-2020-401

[38] As a consequence of the Emergency State Declaration because of COVID-19, the foreseen 700 MHz auction has been postponed.