



5G COUNTRY PROFILE



REPUBLIC OF ALBANIA

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Version 1.1

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Note: Version 1.1 of this document is an advanced draft for possible additional inputs, comments, feedback. The final version of the document is planned to be released after the ITU Regional Forum for Europe.

1. ICT background and current status of broadband

The development of broadband in Albania has been a government priority for years, largely aligned with the integration perspective of the European Union. In 2003, the Albanian government underlined the need to introduce and develop the ICT sector to achieve higher economic growth through the National ICT Policy Strategy.¹ Several policies and programs have been in place ever since, and notable improvements have been achieved in terms of access, infrastructure, and affordability. Nowadays, the broadband market is one of the most vibrant markets in the telecommunications sector in Albania.² Despite the recent ICT developments in the country, rural connectivity remains a challenge, where costs can be high and penetration low.³ In the 2017 ITU ICT Development Index (IDI), Albania ranks 89th out of 176 countries.⁴

Albania saw significant developments as a result of its first National Broadband Plan (NBP) from 2013, which provides a set of directions and goals to be undertaken by the government, public agencies, and other regulatory agencies for the 2013-2020 period. The NBP for the 2013-2020 period was focused on: I) Improving and further developing broadband infrastructure throughout the country; II) Increasing Internet penetration; III) Providing Internet with high speed and reliability at local, regional and national level, including rural and remote areas; IV) Increasing competition and lowering the prices; V) Improving quality of service; VI) Expanding the number of electronic services (e-services) available to Albanian citizens and digitalization of all public services; and VII) Raising the awareness of the society, including people with special needs, regarding the benefits arising from the use of broadband services.

In June 2020, the Albanian government approved and adopted the National Plan for Sustainable Development of Digital Infrastructure, Broadband 2020-2026.⁵ The new National Broadband Targets (“NBTs”) of Albania constitute the following:⁶

- By the end of 2025, to have broadband penetration of 100% of households, businesses and public institutions with:
 - ✓ 50% having high-speed access of at least 1 Gbps (urban areas – Tirana);
 - ✓ 50% having access at the speed of at least 100 Mbps;
- By the end of 2025, to have 100% of households in rural and remote areas connected with broadband access of at least 100 Mbps;
- By the end of 2025, to have 100% of schools connected with high-speed broadband connectivity of 1 Gbps and access in every classroom;
- By the end of 2025, to have 100% of universities connected with high-speed broadband connectivity of 1 Gbps;

¹ See: https://danube-inco.net/object/document/11073/attach/0120_ict_strategy_Albania.pdf

² See: ITU, 2020. *Policy Paper Update: National Broadband Plan 2020-2025 for Albania: A review of the 2013 vision, objectives and targets.*

³ See: https://www.itu.int/en/ITU-D/Statistics/Documents/publications/misr2017/MISR2017_Volume2.pdf

⁴ See: <https://www.itu.int/net4/ITU-D/idi/2017/index.html>

⁵ See: <http://www.infrastruktura.gov.al/wp-content/uploads/2020/07/National-Plan-BBAnd-EN.pdf>

⁶ Both of Albania’s national broadband plans were developed with the support of the ITU under the Regional Initiatives for Europe. See more: ITU, 2020. *Policy Paper Update: National Broadband Plan 2020-2025 for Albania: A review of the 2013 vision, objectives and targets*

- By the end of 2025, to have 100% of health centres and hospitals connected with a high-speed 1 Gbps broadband connection;
- By the end of 2025, have one major city, the major transport corridors and strategic locations covered with 5G connectivity;
- By the end of 2023, bring free access to Wi-Fi connectivity in 50% of the biggest public spaces like parks, libraries and squares in all cities and villages.

The major supporting targets (“SNBTs”) for the 2020-2025 constitute the following:⁷

- By the end of 2020, to have established a clear process with clear responsibilities regarding the application and issuing of construction permits;
- By the end of 2022, to have freed up the 700 MHz band from media broadcast operators and have reissued the 700 MHz band to MNOs;
- By the end of 2020, to have established Competent Broadband Offices (CBOs) and assigned responsibilities at municipality level;
- By end of 2021, to have established the national regulator as the sectoral CIRT;
- By the end of 2021, to have established a US Fund, including a public funding mechanism and clear rules for disbursement;
- By the end of 2021, to have adopted regulations for State Aid;
- By the end of 2020, to have updated Atlas to include all active infrastructure operators and alternative infrastructure providers (utilities);
- By the end of 2020, to have created an inventory of alternative infrastructure that can be used for broadband, including utilities and passive infrastructure owned by municipalities;
- By the end of 2022, to have established financing, funding and provision mechanisms for public Wi-Fi networks; and
- By end of 2022, to have addressed any given anticompetitive practices that undermine the development of broadband infrastructure.

In the context of Western Balkans Investment Framework (WBIF), a feasibility study and CBA for the regional broadband development in Albania was completed. The closure workshop was held on 28th of July 2020⁸. Moreover, the European Investment Bank is in the preparation phase of providing a 48 million EUR grant to Albania’s Ministry of Infrastructure and Energy to develop Broadband. This projects aims to achieve the following results and benefits in the country: I) 500 health facilities with at least 30 MB fixed broadband connection; II) 3,000 educational facilities with at least 30 Mbps fixed broadband connection; III) 61 public institutions with at least 30 Mbps fixed broadband connection; and IV) Increase to 70% the share of households with broadband connection across the country.⁹

⁷ See: ITU, 2020. *Policy Paper Update: National Broadband Plan 2020-2025 for Albania: A review of the 2013 vision, objectives and targets*, 2020.

⁸ See: https://eeas.europa.eu/delegations/albania/83464/regional-broadband-infrastructure-development-albania-closing-workshop_en

⁹ See: <https://www.wbif.eu/project/PRJ-ALB-DII-001>

Additionally, the Electronic and Postal Communications Authority (AKEP) is continuously cooperating with local authorities to grant permits for operators to deploy broadband infrastructure, especially in underserved areas with fixed and mobile services as part of the AKEP Action Plan 2019.

Other broadband-related relevant policies include the Economic Reform Programme 2019-2021, Albania's 5G Strategy, Regional Strategies—Including SEE-2020 and MAP-REA WB6 and the Balkans Digital Highway—and Albania's National Cyber Security Strategy.¹⁰

2. Broadband and mobile telecommunication sectors data

According to ITU data, 69.64% of individuals in Albania had access to the Internet in 2019.¹¹ In 2010, the data estimate for Albania was 45% and, in 2000, only 0.11%.¹² In 2019, the number of fixed-broadband subscriptions per 100 inhabitants was 15.14.¹³ Between 2013 and 2020, fixed-broadband penetration for both population and family has increased more than twofold, although it remains well below the EU average and other penetration levels of neighboring countries, albeit growing by 10%-15% annually.¹⁴ From the regional perspective, Europe's average fixed-broadband basket cost was 1.5 percent of the GNI per capita (and the CIS region was 3.7 per cent) in 2019, while Albania's corresponded to 1.6 per cent for unlimited Internet data cap.¹⁵ Despite the significant increase, ITU data show that the proportion of households with Internet access at home was 32.9%.¹⁶

In 2018, the number of active mobile-cellular subscriptions per 100 inhabitants was 91.29.¹⁷ Moreover, the number of active mobile-broadband subscriptions per 100 inhabitants was 62.10 in the same year.¹⁸ There are 240 internet service providers authorized by AKEP in Albania and three mobile network operators that offer 3G and 4G services: Vodafone, Telekom Albania and ALBtelecom. Most of the 4G coverage is concentrated in urban areas, which is supported by the most recent findings of the WBIF19 Digital Diagnostics Report.¹⁹ In total there are 63% of Albanians that use mobile broadband. The country's mobile-data basket cost corresponded to 1.1 per cent of the GNI per capita in 2019 for a monthly data allowance of 3.0 Gb,²⁰ while the European region's average was 0.8 per cent (and the CIS region was 2.2) for the same year.

According to the Digital Agenda for 2015-2020, Albania's physical extension of fibre optic infrastructure reached 5,000km in 2015, and the network has been growing ever since.²¹ Broadband is currently supplied

¹⁰ Ibid., 24.

¹¹ See: ITU World Telecommunication/ICT Indicators Database online: <http://handle.itu.int/11.1002/pub/81550f97-en> (indicator "i99H") https://www.itu.int/en/ITU-D/Statistics/Documents/statistics/2019/Individuals_Internet_2000-2018_Dec2019.xls

¹² See: https://www.itu.int/en/ITU-D/Statistics/Documents/statistics/2019/Individuals_Internet_2000-2018_Dec2019.xls

¹³ See: ITU World Telecommunication/ICT Indicators Database online (2020): <http://handle.itu.int/11.1002/pub/81550f97-en> (indicator "i992b")

¹⁴ See: <http://www.infrastruktura.gov.al/wp-content/uploads/2020/07/National-Plan-BBAnd-EN.pdf>

¹⁵ See: https://www.itu.int/en/ITU-D/Statistics/Documents/publications/prices2019/ITU_ICTpriceTrends_2019.pdf

¹⁶ <https://www.itu.int/en/ITU-D/Statistics/Documents/statistics/2019/CoreHouseholdIndicators.xlsx>

¹⁷ See: ITU World Telecommunication/ICT Indicators Database online (2020): <http://handle.itu.int/11.1002/pub/81550f97-en> (indicators "i911")

¹⁸ See: ITU World Telecommunication/ICT Indicators Database online (2020): <http://handle.itu.int/11.1002/pub/81550f97-en> (indicators "i911mw")

¹⁹ See: <http://www.infrastruktura.gov.al/wp-content/uploads/2020/07/National-Plan-BBAnd-EN.pdf>

²⁰ See: https://www.itu.int/en/ITU-D/Statistics/Documents/publications/prices2019/ITU_ICTpriceTrends_2019.pdf

²¹ See: Albania Digital Agenda 2015-2020, https://issuu.com/miap4/docs/booklet_m-inovacionit_preview

through myriad fixed and mobile technologies including DSL, FTTH/FTTB, FTTx in combination with NGA. Most DSL lines are combined with fiber optic and copper networks (FTTN /FTTB). Broadband is also supplied via coax cable (HFC) and electricity lines (BPL). Increased investments on fiber optics (FTTH and FTTB) are undergoing by fixed-network operators. Yet, broadband speeds, according to AKEP's reports and Feasibility Study's results, are low: the existing bandwidth in fixed and mobile networks is less than 30 Mbps.²²

In terms of mobile technologies, broadband is supplied via 3G/HSPA/HSPA+ and 4G/LTE networks, as well as satellite technologies. In 2019, 99.2% of the population had 3G network coverage, while 4G covers about 95% of the population in Albania.²³ During the same year, the mobile-broadband Internet traffic within the country corresponded to 0.069 exabytes.²⁴

3. Current progress on 5G: consultations and national strategies

4G services were launched in July-September 2015 using the 1800 MHz frequency band covering between 65% and 85% of the population.²⁵ 4G infrastructure is present in most cities but not in all rural areas, though AKEP issued 2 authorizations to two operators in the 800 MHz band (4G) in 2018 to improve coverage.

Stakeholders and telecom investors expect 5G to play a crucial role in Albania's national infrastructure. While the expansion of broadband has seen a steady growth over the past few years, 5G development in the country is in its initial phase. As the country is proceeding towards granting extensive 4G coverage, government has already considered 5G as a future step in broadband infrastructure development. In recent policy documents, 5G infrastructure development is mentioned in Objective 1 of the "Digital Agenda of Albania" in relation to appropriate spectrum policy development.

Furthermore, Albania's Ministry of Infrastructure and Energy and external experts held a 5G ecosystem Workshop in July 2019 as well as an Expert Report "5G Strategy for Albania", which generated a roadmap and 5 key recommendations for 5G development, yet to be finalized.²⁶ Put forward by AKEP and by the Ministry of Infrastructure and Energy (MIE), together with experts and market stakeholders, these recommendations are as follows:²⁷

✓ Recommendation 1: Facilitate the timely availability of spectrum.

- Make spectrum available in the 5G bands according to the ITU spectrum roadmap and consultation with operators plans;

²² See: <http://www.infrastruktura.gov.al/wp-content/uploads/2020/07/National-Plan-BBAnd-EN.pdf>

²³ See: ITU World Telecommunication/ICT Indicators Database online (2020): <http://handle.itu.int/11.1002/pub/81550f97-en> (indicators "i271G and i271GA")

²⁴ See: ITU World Telecommunication/ICT Indicators Database online (2020): <http://handle.itu.int/11.1002/pub/81550f97-en> (indicators "i136mwi.")

²⁵ See: *Policy Paper Update: National Broadband Plan 2020-2025 for Albania*, ITU.

²⁶ See: ITU, 2020: *Policy Paper Update: National Broadband Plan 2020-2025 for Albania: A review of the 2013 vision, objectives and targets*, 2020. Annex: "5G Strategy for Albania – Roadmap for the 5th generation of mobile communication in Albania."

²⁷ See: ITU, 2020. *Policy Paper Update: National Broadband Plan 2020-2025 for Albania: A review of the 2013 vision, objectives and targets*, 2020.

- Clearing 700MHz for broad 5G coverage;
 - Adopt national spectrum policy measures to encourage long-term heavy investments in 5G networks;
 - Address synchronisation issues with other networks, including those with neighbouring countries;
 - Effective spectrum pricing policies are vital to support better quality and more affordable 5G services;
 - Make available test frequencies.
- ✓ Recommendation 2: Simplification of processes to reduce the administrative complexity for build permits.
- Reduce the application complexity to avoid additional overhead cost and minimize the application time;
 - Consider adding Small Cells, in the list of construction, installation and works, defined from the Development Regulation, as works that do not require build permits and are subject to a preliminary declaration (Article 41, Law 107/2014). The same approach may apply for rooftop sites as well;
 - Flexibility from AZHT on law interpretation, regarding the number of sites to include in one application;
 - Review of procedure for construction tax payment, by avoiding steps that delay the process and have additional cost from operators as no need for additional confirmation from the municipality to AZHT, but just to upload the certification of the payment from the operator and the process to be closed.
- ✓ Recommendation 3: Facilitate Network rollout
- Facilitate access to lamp posts, street furniture and public buildings for small cell deployments;
 - Bring into effect new building regulations which require all new buildings to have infrastructure capable of delivering superfast broadband;
 - Facilitate additional deployment and access to fibre;
 - Support and challenge local government in their plans to enable the delivery of digital infrastructure; both in terms of ensuring that these plans help Albania to meet its national objectives, and that local authorities develop consistent approaches to support the deployment of mobile infrastructure across the country;
 - Recommend promulgation of guidelines on infrastructure sharing spanning both passive (site common space, towers/ducts) and active (antennas, BBUs etc.) infrastructure components;
 - Consider a proportionate fees regime for site rental to ease the deployment of a larger number of antennas;
- ✓ Recommendation 4: Address any environmental consideration
- Promote network densification with small cells to ensure low radiation levels;

- Re-evaluate the accuracy of the limits, considering the new technological developments along with the potentially large number of intelligent antennas using MIMO and beamforming techniques;
- Pursue efforts regarding transparency by making the authorisations and measurement results publicly available.

✓ Recommendation 5: Promoting awareness on opportunities and benefits of 5G

- Organize 5G events where applications that address different user cases might be presented and experiences from other countries on 5G successful deployment can be shared;
- Initiate 5G Dialog forum to intensify the dialogue with the user industries;
- Need for structured skills development programs.

Moreover, to achieve the goals of 5G service provision in 2021 as set out in the 5G Strategy, the 3.5 GHz band should be auctioned as soon as possible during 2020 and be a key part of the National Broadband Plan.²⁸

While the Government is in the process of finalizing a draft strategy on 5G, a spectrum policy paper was approved by Decision of Government no. 636 dated 29.07.2020 “For the approval of the multiannual spectral policy program and action plan”.

4. Spectrum assignment for 5G & market development

AKEP claims that the main barrier for 5G development in Albania is the “clash of frequencies” in the country. The 700 MHz band (694-790 MHz) is being overused used by TV broadcasters, making it challenging for the development of 5G networks,²⁹ in line with the requirements for Region 1 agreed at the World Radiocommunication Conference in 2019 (WRC-19). In this context, regulators expressed they are prepared to intensify the work toward migrating Albanian digital television frequencies to the 470MHz-694MHz band in order to release the 700MHz band (694-790 MHz) for use by mobile telecom networks.

The microwave links using the V-band—or the E-band—are a good and more cost-effective alternatives to optical fibres and well suited to supporting 5G (and broadband in general). Private sector stakeholders raised the issue that high frequency fees for microwave links in the V- and E-bands serve as a disincentive to invest, particularly so in the context of 5G³⁰ and would like to see a downward review of current fees for these bands per link to boost deployment.

Furthermore, the challenges for policymakers, regulators, industry, and operators remain the case, with spectrum allocation and regulatory policies likely to continue one of the critical issues in this process.³¹

²⁸ See: <http://www.infrastruktura.gov.al/wp-content/uploads/2020/07/National-Plan-BBAnd-EN.pdf>. Please note the draft on 5G is still to be finalized. For more information contact the Ministry.

²⁹ See: <https://cms.law/en/int/expert-guides/cms-expert-guide-to-5g/albania>

³⁰ See: ITU, 2020. *Policy Paper Update: National Broadband Plan 2020-2025 for Albania*, 34.

³¹ See: <http://ijcsn.org/IJCSN-2017/6-3/The-Way-to-5G-Networks-and-Spectrum-Policies-to-Cope-with-High-Data-Communication-Consumption-The-Albanian-Case.pdf>

As of now, there are no specific 5G regulations and strategies in place by the government. The tender of 800 MHz has been concluded with 2 assignments of 10 MHz (paired) to Vodafone Albania and Telecom Albania. In addition, there is still a part of 800 MHz band (10 MHz paired) available for mobile broadband.³²

Currently, the stakeholders hope to proceed with testing of DVB-T2 digital terrestrial television (DTT) broadcasting, whose adoption will involve migrating DTT providers from the 700MHz frequency band to a lower range, freeing up the 700MHz band for subsequent 5G mobile spectrum licensing. Similar to other nations in the region, the 700 MHz band is currently in use by analogue and digital operators for audio-visual transmission.³³

As mobile networks are more advanced in Albania than fixed networks in regard to penetration and speeds, the private sector stakeholders stress that the auction of the 3.5 GHz band needs to be accelerated and auctioned as soon as possible during 2020, in addition to becoming as a key part of the NBP.³⁴

More commercial, as well as government-led developments on 5G, are expected to be rolled out in 2020 and years ahead.

5. Electromagnetic fields levels and the implementation dynamics

In the Republic of Albania, the competent bodies which cover the main issues of nonionizing radiation are the Commission for Radiation Protection (CRP) and the Office for Radiation Protection (ORP), in accordance of Law no. 10469, dated 13.10.2011 “On Protection from Non-ionizing Radiation.” These bodies are responsible for the drafting of regulations which determine the radiation limits, as well as the conduction of studies to prevent and maintain public health in our country.

In 2018 and 2019, AKEP conducted a frequency monitoring campaign in public institutions such as schools, kindergarten, and hospitals. Results, also published on AKEP’s website, were sent to Office for Radio Protection (ORP) which calculated the electromagnetic field levels. Measurements were also carried out near the transmitting antennas in cases when it was requested by the Office for Radiation Protection.³⁵

AKEP conducts measurements of field transmission points, which are a concern, ensuring compliance with the guidelines published by the ORP and the International Commission on Non-Ionizing Radiation Protection (ICNIRP). The results of the measurements recorded so far indicate that the levels of radiation emitted by mobile antennas do not exceed the safety threshold, set by ORP and ICNIRP. ORP has assessed that no tested installation has exceeded the specified radiation safety limit.

³² For more information, please contact AKEP.

³³ See: ITU, 2020. *Policy Paper Update: National Broadband Plan 2020-2025 for Albania*, ITU, 34.

³⁴ See: ITU, 2020. *Policy Paper Update: National Broadband Plan 2020-2025 for Albania*, 35.

³⁵ See: <http://www.infrastruktura.gov.al/wp-content/uploads/2020/07/National-Plan-BBAnd-EN.pdf>

In face of the social concerns surrounding EMF and 5G, AKEP, supporting the mission of the competent bodies CRP and ORP, will continue to perform measurements of the power of antenna transmission, in order to ascertain the field values and will monitor changes in power derived from the implementation of 5G technology.

Albania does not belong to the group of European countries high-level EMF limits being perceived as the barrier for swift 5G implementation.

6. 5G commercial launches: announcements, trial Cities, and digital cross-border corridors

In October 2019, AKEP granted Vodafone Albania permission to kick off 5G technology testing in the country. As the largest and most stable telecommunication supplier in Albania, supplying GSM services in the country since 2001, Vodafone was given the authorization to use the frequencies 3600-3700 MHz of the 3600-3800 MHz band for measurement, research, and testing, all of which would need to be reported at the end of the two-month testing period to AKEP.³⁶ In this engagement, Vodafone Albania managed to use these allocated frequencies to test new 5G technology, including Massive MIMO, maximum speeds with LTE carrier aggregation and 5G, and latency.

During a public event to celebrate the spectrum allocation for 5G research in the country, Vodafone Albania demonstrated the potential of 5G networks by introducing high-level politicians to a remote electric car in Tirana; thus, becoming the first operator to bring 5G experience to the country.³⁷ After the testing period in December 2019, however, Vodafone Albania did not continue with the testing trials.

In addition to Vodafone Albania, there have also been commercial announcements of Telekom Albania, now One Telecommunications,³⁸ and Ericsson in signing agreements to modernize the country's transmission network, which may have consequences for the 5G development, as well as for the ways in which it will be regulated or how stakeholders will compete or collaborate. The agreement between these two companies expects Ericsson to upgrade Telekom Albania's network capabilities to Gigabit LTE while also making the network 5G ready using the latest Eric Radio System equipment.³⁹

³⁶ See: <https://akep.al/wp-content/uploads/2019/10/VKD-nr.-34-date-14.10.2019-Vodafone-Albania-Autorizim-Individual-3600-3700-MHz-per-prove.pdf>

³⁷ See: <https://www.vodafone.al/per-median/publikime-zyrtare/vodafone-albania-sjell-eksperencen-e-pare-5g-ne-shqiperi/>

³⁸ See: <https://businessmag.al/telekom-albania-ndryshon-emrin-behet-one/>

³⁹ See: <https://www.ericsson.com/en/news/3/2020/ericsson-to-modernize-telekom-albania-core-and-radio-networks>