Part III.5 - Supplementary Information Sheet on State aid for the deployment of broadband networks

State aid measure:

"Large-scale deployment of digital infrastructure on the territory of Bulgaria"

This supplementary information sheet should be used for notifications of aid for the deployment of broadband networks covered by the Commission Guidelines on State aid for broadband networks[1] *("Broadband Guidelines").*

1. General information

1.1. Please provide a detailed description of the aid measure and of its objectives.

Broadband is recognised by the European Commission as one of the main tools for improving the economic and social well-being of the population. The digital society and technologies bring with them new ways of learning, having fun, working, exploring and fulfilling ambitions. They also bring new freedoms and rights and enable European Union (EU) citizens to reach beyond physical communities, geographical locations and social positions. Non-discriminatory, accessible, safe and effective internet access must be provided as a service in the public interest so that everyone can participate in economic and public life. Without high-quality and sustainable digital infrastructure, not only the efficient use of digital services is significantly limited or hampered, but also the use and development of technologies and different innovative solutions. Connectivity is a key building block of the digital transformation. It is of strategic importance for growth and innovation in all economic sectors. Electronic communications networks can help achieve sustainability objectives.

Within the framework of the official presentation of the Technical Report of the Organisation for Economic Co-operation and Development (OECD), reflecting the progress of Bulgaria in the field of digital economy, the OECD Secretariat highly appreciated the technological policy of the country, including the significant financial resources allocated under various programmes, as well as the National Recovery and Resilience Plan. Regarding connectivity, according to the OECD, our country should make additional efforts to develop high-quality digital services and remove administrative barriers.

Broadband connectivity is of strategic importance for European growth and innovation in all sectors of the economy and for social and territorial cohesion. It supports business efficiencies and growth, ensures that economies can remain competitive, and enables citizens and businesses to benefit from online services and offerings.

[1] Guidelines on State aid for broadband networks (OJ C 36, 31.1.2023, p. 1).

The Digital Connectivity component of the National Recovery and Resilience Plan (NRRP) of the Republic of Bulgaria aims at building a modern and secure digital infrastructure and addressing territorial imbalances related to broadband take-up. Digital infrastructure is of strategic importance for social and territorial cohesion and, in general, for competitiveness, sustainability and accelerated digital performance. Digitalisation has a profound impact on the daily social, economic, political and cultural life of society. In this respect, limited access and insufficient network expansion can exacerbate social inequalities and thus create a new digital divide between people. The development of very high capacity networks (VHCNs) in rural, remote and sparsely populated areas is a priority and a key element of social inclusion.

Bulgaria's connectivity and infrastructure positions the country as a leader among Balkan countries. Bulgaria has a well-developed and growing connectivity infrastructure. The internet penetration rate is high, with a significant portion of the population having access to the internet. Broadband services are widely available in urban areas but rural areas lack coverage. Many providers offer high-speed internet services. Bulgaria has a modern telecommunications system and a well-developed mobile network infrastructure, and all mobile operators have rolled out 5G networks. Policies supporting construction, 2023 planned updates to the Spatial Development Act, last year's granting of more spectrum bands and recently reduced spectrum fees have enhanced connectivity and will ensure the country catches up on 5G coverage. The country boasts a large number of data centres and Internet Exchange Points (IXPs), widespread high-speed internet access, and a well-established institutional framework through the Electronic Communications Act and updates to the National broadband Infrastructure plan 'Connected Bulgaria'.

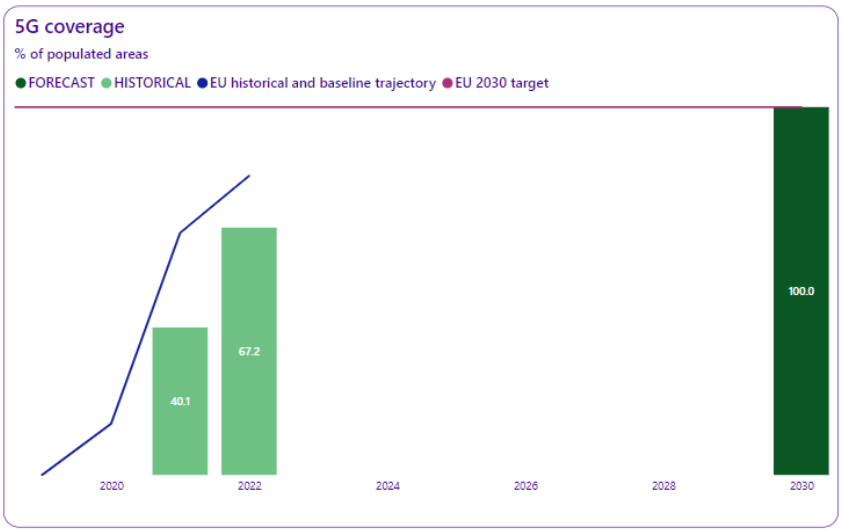
It is important for Bulgaria to address inadequate digital infrastructure in rural areas as a persistent challenge for Gigabit connectivity. Despite high internet penetration rates, there is limited investment particularly in rural regions resulting in a strong rural-urban digital divide. Fragmented infrastructure among small operators and regulatory requirements for infrastructure deployment are also hindrances. Administrative delays in the investment process, and insufficiently unified administrative requirements for building high-speed networks further add to the challenge of rolling out digital infrastructure in the country.

Within urban areas, there is a widespread availability of such networks provided by alternative operators. The incumbent competes with these networks via the deployment of FTTP technologies. As a result, there is potent infrastructure-based competition. However, in rural areas, there is considerably less competition. Even though Bulgaria made considerable efforts, creating incentives for the deployment of new infrastructures as well as providing public funding, fully covering these areas is an extremely difficult task. The situation is further complicated by a low demand from a substantial part of the population, as only 35.5% of the population has at least basic digital skills.

Bulgaria has scope to improve its performance to contribute to the EU's 5G coverage Digital Decade target and is demonstrating limited dynamic[2]. 70.9% of the country's populated areas are covered with 5G, which remains below the EU average of 89.3%. Based on the current rate of progress of 5.4% average annual growth (vs. the EU average of 9.8%), it appears

[2] https://digital-strategy.ec.europa.eu/en/library/digital-decade-2024-country-reports

that Bulgaria will reach this EU target timely and could go even beyond if efforts are intensified. Furthermore, 5G in the 3.4-3.8 GHz band, an essential band for enabling advanced applications requiring large spectrum bandwidth, covers 45.1% of Bulgarian households in 2023, slightly below EU average (50.6%). Take-up of high-speed broadband is poor with the share of fixed broadband subscriptions reported at 53.4% for speeds of more than 100 Mbps (below the EU average) and 1% for speeds of more than 1 Gbps. Mobile broadband take-up rate is at 79.6%, an increase of 6.1 percentage points compared to DESI 2023, but still below the EU average of 89.94% – placing Bulgaria last behind all other Member States. The share of Bulgarians using 5G SIM cards was 14.5% in 2023, well below the EU average of 24.6%.



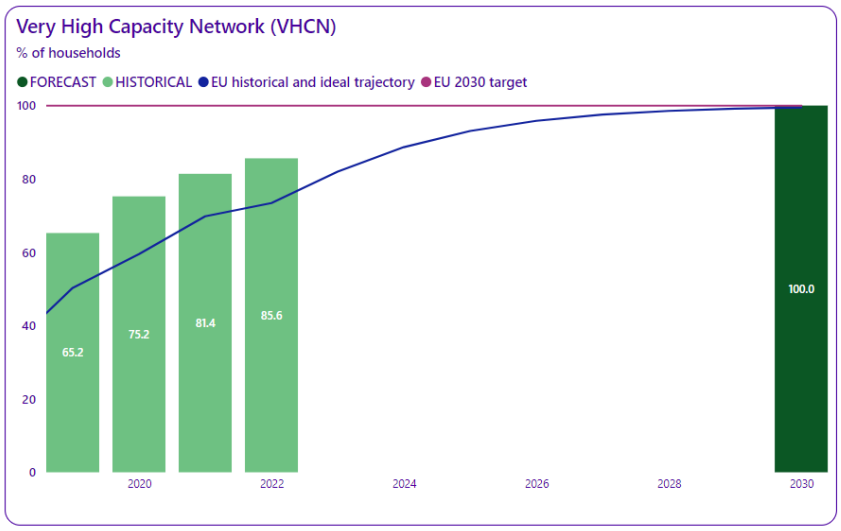
2023 state of play and recent progress

	Country level	EU level
FORECAST		
DESI 2024	70.9	89.3
AVERAGE ANNUAL GROWTH %	5.4	9.8

Average, annual growth is computed between the two most recent available data points. No ideal trajectory, and therefore no EU level forecast, is provided for 5G (see 2023 Communication on EU-level trajectories)

Note: The source of national forecast values is the 2023 country roadmap

In the area of digital infrastructure and connectivity, and in particular gigabit connectivity, Bulgaria is one of the forerunners in the EU. It is important for Bulgaria to address the problem of inadequate digital infrastructure coverage in sparsely populated, remote and rural areas as this is a persistent challenge for 5G wireless and gigabit connectivity. This is particularly the case with public funding, especially in the rural, remote and scarcely populated areas where operators have no commercial drivers in investing in the deployment of VHCN. Take-up of high-speed broadband is poor, with the share of fixed broadband subscriptions reported at 53.4% for speeds of >100 Mbps (below the EU average) and 1% for speeds of >1 Gbps. The high prices of gigabit services are an issue given the low purchasing power of the average internet user in Bulgaria.

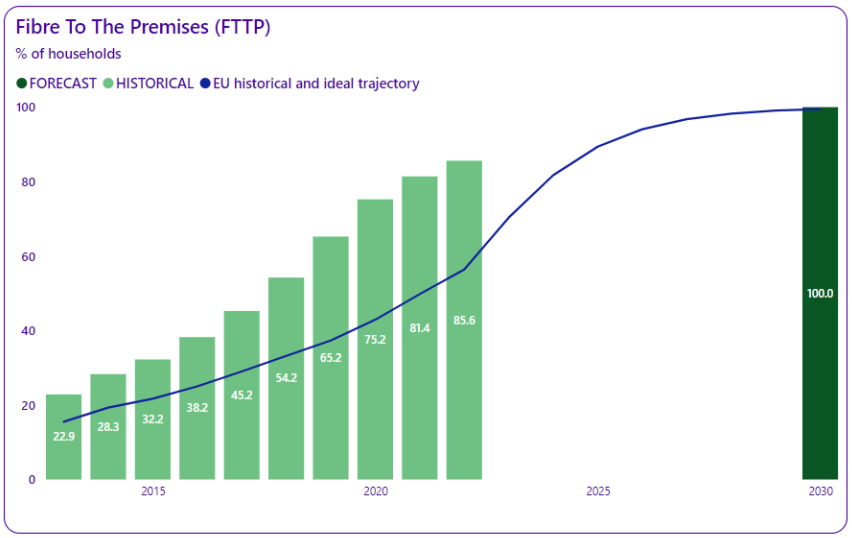


2023 state of play and recent progress

	Country level	EU level
FORECAST		82.0
DESI 2024	88.6	78.8
AVERAGE ANNUAL GROWTH %	3.5	7.4

Average, annual growth is computed between the two most recent available data points

Note: The source of national forecast values is the 2023 country roadmap



2023 state of play and recent progress

	Country level	EU level
FORECAST		70.3
DESI 2024	88.6	64.0
AVERAGE ANNUAL GROWTH %	3.5	13.5

Average, annual growth is computed between the two most recent available data points

Note: The source of national forecast values is the 2023 country roadmap

Bulgaria brings a very strong contribution to the EU's Digital Decade target for Fibre-to-the-premises (FTTP), while demonstrating limited dynamic. 88.6% of the country's households are connected with fibre, against an EU average of 64%, and with an average annual growth of 3.5%. Taking into account the current rate of progress, which is lower than EU average, reaching the target by 2030 would imply an intensification of efforts here as well.

The gaps to target may be indicators of low demand, and suggest a need for measures to increase digital skills and generate more demand. Due to Bulgaria's rural-urban divide, all the efforts and investments currently being planned may not be enough to bridge these gaps.

There are significant disparities in digital access across Bulgaria, particularly between urban and rural areas. While some regions show high levels of 4G coverage, 5G penetration remains minimal, particularly in rural areas. For instance, the North-West Region shows only 2% coverage of 5G despite 90% coverage of high-speed 4G. Similarly, the North-East Region, while better at 5%, still requires substantial infrastructure upgrades to achieve comprehensive digital inclusion.

The analysis emphasizes the urgent need to enhance 5G capabilities through robust fiber-optic backhaul systems. Such enhancements are deemed crucial not only for elevating service reliability and speeds but also for supporting economic activities and essential services across regions.

The Ministry of Transport and Communications (MTC), together with the Executive Agency Electronic Governance Infrastructure (EA EGI) pursuant to Council of Ministers Decree No 333 of 20 October 2022 amending Decree No 157 of 7 July 2022 on the designation of the authorities and structures responsible for the implementation of the Recovery and Resilience Plan of the Republic of Bulgaria, are responsible for the implementation of the investment 'Large-scale deployment of digital infrastructure on the territory of Bulgaria' of the NRRP. The budget of the measure amounts to BGN 391 642 210.83 exl. VAT/EURO 200 243 482.72 exl. VAT financed by the Recovery and Resilience Facility.

Very high capacity networks (VHCNs) are necessary to maximise the growth potential of the digital economy. Instant transmission capability and high reliability will allow hundreds of devices to cooperate in real time. The first visible effect of high-speed networks is to increase the speed of devices when downloading and exchanging information.

TheNextGenerationEU Communication identifies as one of the key priorities of the Recovery and Resilience Facility (RRF) support for the digital transition through connectivity measures aimed, inter alia, at addressing market failures with respect to the deployment of performant networks. The RRF Regulation sets out that Member States should devote at least 20% of the allocated funding to measures fostering the digital transition.

The Digital Connectivity component of the National Recovery and Resilience Plan (NRRP) of the Republic of Bulgaria aims at building a modern and secure digital infrastructure and addressing territorial imbalances related to broadband take-up.

1. Need For Intervention and Strategic Objectives

1.1.Need For Intervention

In Bulgaria, substantial portions of the population remain unable to connect to high-speed networks, representing a significant barrier to the nation's transition to a gigabit society. This digital divide not only stifles economic and technological growth but also exacerbates rural depopulation across extensive areas. Consequently, the strategic goal is twofold: firstly, to invigorate connectivity in under-served rural locales, and secondly, to ensure universal access to Very High-Capacity Networks (VHCNs) for all Bulgarian citizens.

1.2.Detailed description of the aid measure and of its objectives

The material scope of the intervention will be limited to the provision of backhaul connection via optical fibre, including the passive part and the corresponding active elements, to areas, which do not currently have, nor will have by 30 June 2026, a fiber optic backhaul that allows to cope with services resulting from the implementation of the capacities and characteristics of VHCN networks, including 5G. The provision of these backhaul connections incentivizes the widest possible use of existing infrastructure.

Main element of the intervention will be the provision of connectivity for the state network, and in this part the investment will be directed at the aggregation layer. The aggregation layer is at the local network centers and combines traffic from network access points in urban areas, connecting them to specific local network centers.

There are 2 strategic objectives outlined in the planned intervention for large-scale deployment of digital infrastructure.

Strategic Objective 1: Comprehensive Enhancement of the Unified Electronic Communication Network (UECM).

This objective is centered on the substantial upgrade and expansion of the Unified Electronic Communication Network of the state administration. The plan involves extending the fibre-optic connectivity to additional 140 municipal centers to ensure secure, cyber-resilient communications and "clean pipe" internet services, shielded from volumetric DDoS attacks, catering specifically to the requirements of state governance and national security. Furthermore, it aims to provide essential optical transmission capacity to municipal centers. In additional 45 municipalities the existing networks will be upgraded with performant active equipment in order to establish new access nodes for very high capacity networks.

The 140 targeted municipalities that should be connected to the state network are presented in the table below:

No	Municipality	Area in km2	Population in the municipality	Population in the municipal center	Number of towns and villages in the municipality	Number of administrative structures	Number of EAEs provided by administrations in the municipality	Percentage of internet coverage
1	Kameno	354,946	10 609	4 051	13	9	137	19%
2	Malko Tarnovo	783,672	2 993	1 890	13	14	104	46%
3	Tsarevo	513,399	9 164	5 770	13	15	105	41%
4	Pomorie	413,189	27 839	14 033	17	18	77	27%
5	Sozopol	480,067	13 982	4 697	12	8	139	58%
6	Sungurlare	794,967	11 189	2 890	28	9	125	21%
7	Primorsko	350,084	6 433	3 062	6	8	83	45%
8	Belitsa	227,380	9 010	2 915	12	9	87	12%
9	Garmen	388,479	14 751	1 980	16	5	129	22%
10	Satovcha	332,591	13 921	1 708	14	8	93	17%
11	Hadzhidimovo	327,778	8 746	2 348	15	4	119	15%
12	Yakoruda	339,276	9 478	5 016	8	12	115	13%
13	Balchik	524,153	19 022	10 870	22	20	128	30%
14	General Toshevo	982,238	12 165	5 830	42	18	132	20%
15	Kavarna	481,367	13 532	10 426	21	16	123	23%
16	Krushari	417,458	3 659	1 138	19	8	109	15%
17	Tervel	579,677	14 941	5 385	26	12	128	23%
18	Shabla	329,639	4 314	2 954	16	9	140	29%

19	Dryanovo	271,162	8 313	6 107	63	14	81	32%
20	Tryavna	254,909	9 526	7 624	106	13	131	17%
21	Ivaylovgrad	814,137	5 298	2 943	51	12	118	27%
22	Lyubimets	344,271	8 890	6 751	10	12	143	25%
23	Madzharovo	247,224	2 023	567	19	6	119	18%
24	Bolyarovo	667,881	3 435	1 063	20	8	129	34%
25	Straldzha	676,285	11 331	5 397	22	9	144	20%
26	Boboshevo	135,142	2 424	1 086	12	5	71	24%
27	Kocherinovo	182,306	4 129	1 957	11	4	167	25%
28	Rila	360,960	2 366	1 958	5	7	131	28%
29	Sapareva Banya	180,921	6 439	3 396	5	3	115	28%
30	Treklyano	257,826	714	289	19	6	86	4%
31	Dzhebel	229,079	9 751	3 391	47	8	136	21%
32	Kirkovo	537,871	22 990	619	72	8	138	67%
33	Krumovgrad	843,319	18 112	4 868	80	13	109	24%
34	Momchilgrad	358,124	16 635	8 148	49	15	45	25%
35	Apriltsi	238,256	2 741	2 442	4	12	107	26%
36	Letnitsa	177,719	3 257	2 352	4	8	132	20%
37	Lukovit	453,408	16 039	8 105	12	16	118	16%
38	Berkovitsa	465,043	15 520	11 372	20	19	158	30%
39	Brusartsi	194,434	4 029	882	10	9	121	23%
40	Valchedrum	431,514	7 990	2 890	11	9	107	26%
41	Varshets	240,112	6 626	5 265	10	13	156	26%
42	Georgi Damyanovo	297,594	2 089	405	13	5	143	12%
43	Lom	323,882	22 916	18 593	10	23	142	25%
44	Chiprovtsi	286,881	3 005	1 454	10	7	139	26%
45	Yakimovo	220,977	3 753	1 561	4	5	96	20%
46	Batak	677,310	5 008	2 577	3	8	103	31%
47	Belovo	346,356	7 242	3 287	8	10	129	30%
48	Bratsigovo	212,053	8 188	3 628	7	11	141	14%
49	Lesichovo	209,430	5 085	750	7	7	153	25%
50	Peshtera	152,800	16 983	15 175	4	13	141	27%
51	Rakitovo	246,438	14 280	7 814	3	8	160	19%
52	September	349,372	23 348	7 058	15	19	137	24%
53	Sarnitsa	198,592	4 617	3 321	3	7	113	13%
54	Kaloyanovo	347,452	10 791	2 424	15	9	133	19%
55	Karlovo	1 040,011	46 437	20 251	27	18	121	31%
56	Parvomay	521,590	22 574	11 621	17	16	97	33%
57	Suedinenie	297,992	9 504	5 290	10	8	116	22%
58	Hisarya	548,550	10 435	6 142	12	11	129	27%
59	Krichim	54,895	7 636	7 636	1	7	118	19%
60	Perushtitsa	48,719	4 735	4 735	1	8	121	23%
61	Sopot	55,541	8 921	7 935	2	8	131	33%
62	Breznik	404,038	5 904	3 735	35	8	172	15%
63	Zemen	247,077	2 330	1 413	18	10	111	20%

64	Tran	573,460	3 813	2 290	52	10	128	20%
65	Belene	285,046	7 745	6 496	6	16	104	26%
66	Gulyantsi	459,201	9 614	2 759	12	8	131	24%
67	Dolna Mitropolia	674,897	17 050	2 742	16	12	151	21%
68	Levski	414,692	16 381	8 357	13	11	150	20%
69	Nikopol	416,582	7 447	2 710	14	14	150	13%
70	Pordim	238,132	5 421	1 779	8	10	94	21%
71	Cherven bryag	485,782	23 404	10 742	14	21	143	31%
72	Zavet	273,872	8 726	2 555	7	11	170	18%
73	Isperih	402,244	19 828	7 697	24	21	117	40%
74	Kubrat	439,934	15 015	6 054	17	14	128	29%
75	Tsar Kaloyan	134,800	4 904	2 989	3	11	109	45%
76	Borovo	252,227	4 873	1 698	7	7	102	16%
77	Vetovo	351,219	10 950	3 925	6	11	122	38%
78	Slivo pole	276,822	9 776	2 774	11	11	139	11%
79	Tzenovo	258,204	4 604	1 316	9	6	122	10%
80	Bozhurishte	142,884	9 595	5 811	10	8	124	14%
81	Godech	374,680	5 031	3 991	20	9	134	21%
82	Dragoman	323,862	4 842	3 034	34	9	127	18%
83	Ihtiman	541,775	17 226	12 515	28	15	103	14%
84	Koprivshtitsa	139,165	1 911	1 911	1	7	70	33%
85	Kostenets	302,073	10 859	5 674	9	9	142	39%
86	Kostinbrod	254,412	18 331	11 824	14	15	118	23%
87	Samokov	1 209,859	35 384	24 629	28	21	130	18%
88	Svoge	868,619	19 658	7 361	38	11	146	24%
89	Slivnitsa	187,433	8 924	6 909	13	10	135	15%
90	Anton	76,098	1 442	1 442	1	3	127	21%
91	Mirkovo	207,876	2 307	1 452	11	5	114	26%
92	Chavdar	70,797	1 216	1 216	1	4	110	29%
93	Chelopech	44,390	1 584	1 584	1	4	128	29%
94	Dolna Banya	66,854	4 366	4 318	2	8	128	23%
95	Kaolinovo	293,535	12 803	1 524	16	7	146	8%
96	Nikola Kozlevo	264,335	6 244	810	11	5	110	21%
97	Smyadovo	353,767	5 952	3 565	10	13	144	22%
98	Glavinitsa	481,230	9 580	1 254	23	9	162	28%
99	Kaynardzha	314,961	4 955	548	15	13	122	13%
100	Sitovo	270,966	4 727	623	12	10	119	34%
101	Tutrakan	448,345	12 980	7 478	15	25	140	32%
102	Kotel	858,082	17 654	4 924	22	12	122	18%
103	Tvarditsa	442,496	13 122	5 538	10	10	62	16%
104	Borino	173,204	2 968	2 168	5	6	50	12%
105	Devin	573,684	10 142	5 721	16	12	169	28%
106	Dospat	282,697	7 564	1 986	8	10	155	17%
107	Chepelare	376,440	6 249	4 534	13	10	172	22%
108	Galabovo	348,895	10 779	6 876	11	14	121	29%
109	Maglizh	388,884	9 754	2 963	15	8	156	24%

110	Opan	257,476	2 734	302	13	4	131	21%
111	Radnevo	545,145	17 193	10 784	24	12	159	32%
112	Chirpan	491,705	18 859	13 391	20	20	124	18%
113	Gurkovo	292,261	5 275	2 807	11	9	134	25%
114	Nikolaevo	96,524	4 470	2 720	4	8	140	20%
115	Antonovo	478,775	5 346	1 361	59	10	141	25%
116	Opaka	157,352	5 565	2 341	6	6	113	23%
117	Popovo	832,899	23 819	13 324	35	18	146	33%
118	Aksakovo	460,536	22 108	7 567	23	7	127	27%
119	Beloslav	60,079	10 147	7 114	4	7	95	22%
120	Byala	161,842	3 420	2 227	6	7	143	49%
121	Dolni chiflik	485,147	18 261	6 269	17	7	148	17%
122	Devnya	121,052	8 411	7 685	3	13	125	24%
123	Suvorovo	215,877	7 704	4 425	9	8	112	18%
124	Boynitsa	165,832	780	329	8	6	126	15%
125	Bregovo	179,223	3 967	1 963	10	10	175	23%
126	Gramada	184,213	1 587	1 144	8	6	141	14%
127	Novo selo	109,487	2 290	874	5	6	154	20%
128	Ruzhintsi	232,555	3 335	763	10	5	121	18%
129	Borovan	210,729	4 930	1 957	5	6	127	17%
130	Byala Slatina	545,510	20 206	9 277	15	16	114	19%
131	Kozloduy	284,874	18 196	11 331	5	17	135	40%
132	Krivodol	326,857	7 934	2 502	15	7	140	13%
133	Mizia	209,309	5 666	2 468	6	6	148	17%
134	Oryahovo	326,549	8 813	3 976	7	19	123	28%
135	Hayredin	189,069	3 888	1 132	6	6	99	16%
136	Gorna Oryahovitsa	317,807	39 922	27 317	14	33	112	38%
137	Zlataritsa	232,676	3 536	2 004	24	9	142	27%
138	Lyaskovets	177,373	11 492	7 010	6	8	148	38%
139	Svishtov	625,321	32 275	22 917	16	24	117	21%
140	Strazhitsa	508,297	11 277	4 131	22	13	170	24%

Strategic Objective 2: Bridging the Digital Divide through Infrastructure Development

The second strategic objective focuses on mitigating the "digital divide" by fostering the construction of Very High-Capacity Networks (VHCNs) in under-served, sparsely populated, and rural locales. The initiative targets areas particularly affected by infrastructural deficits arising from market inadequacies. Special attention will be directed towards regions lacking dependable regional or local optical connectivity essential for data transmission to key nodal points in regional and municipal cities. The goal is to provide VHCN for at least 350 000 additional people.

In the design of the measure it will be taken into account that compliance with the ‘do no significant harm’ principle (DNSH) must be ensured by beneficiaries in all phases of the design

and execution of the project and individually for each action, so that they will ensure full compliance with that principle and climate and digital labelling, as provided for in the Bulgarian Recovery and Resilience Plan, and Regulation (EU) 2021/241 of the European Parliament and of the Council of 12 February 2021 establishing the Recovery and Resilience Facility.

In particular, the contribution of component C7.I1 to the digital transition is 100%. This Component connects directly with “Connect”, one of the seven emblematic areas (Flagships areas: Power up, Renovate, Recharge and Refuel, Connect, Modernise, Scale-up and Reskill & Upskill) which are identified by the European Union as key areas in which it encourage member states to direct their reforms and investments.

The suggested settlements for intervention are presented in the table below:

№	Name of locality	Municipality	Area	DEGURBA 2021	Population	EKATTE	Without 1 gbts mobile	Without 1 gbts Fixed
1.	Ablanitsa	Hadzhidimovo	Blagoevgrad	Rural areas	2262	14	Yes	Yes
2.	Aksakovo	Aksakovo	Varna	Urban areas - Towns and suburbs	7064	182	not	not
3.	Aleko Konstantinovo	Pazardzhik	Pazardzhik	Urban areas - Cities	2082	254	not	Yes
4.	Aleksandrovo	Pavel Banya	Stara Zagora	Rural areas	1664	309	Yes	Yes
5.	Anevo	Sopot	Plovdiv	Urban areas - Towns and suburbs	905	480	not	Yes
6.	Anton	Anton	Sofia	Urban areas - Towns and suburbs	1424	504	Yes	Yes
7.	Antonovo	Antonovo	Targovishte	Urban areas - Cities	968	518	Yes	Yes
8.	Aprilovo	Gorna Malina	Sofia	Rural areas	1074	549	Yes	Yes
9.	Balchik	Balchik	Dobrich	Rural areas	9291	2508	not	not
10.	Banya	Nova Zagora	Sliven	Urban areas - Towns and suburbs	1021	2734	Yes	Yes
11.	Bata	Pomorie	Burgas	Rural areas	949	2810	Yes	Yes
12.	Batak	Batak	Pazardzhik	Rural areas	2601	2837	Yes	not
13.	Belashtitsa	Rodopi	Plovdiv	Rural areas	2463	3304	not	not
14.	Belene	Belene	Pleven	Urban areas - Towns and suburbs	6293	3366	not	not
15.	Belitsa	Belitsa	Blagoevgrad	Rural areas	2959	3504	Yes	not
16.	Belovo	Belovo	Pazardzhik	Rural areas	3109	3592	Yes	not

17.	Belozem	Rakovski	Plovdiv	Urban areas - Towns and suburbs	3787	3620	Yes	Yes
18.	Beloslav	Beloslav	Varna	Urban areas - Towns and suburbs	6794	3719	Yes	Yes
19.	Berkovitsa	Berkovitsa	Montana	Urban areas - Towns and suburbs	9945	3928	not	not
20.	Bobov dol	Bobov dol	Kyustendil	Urban areas - Towns and suburbs	4188	4501	Yes	Yes
21.	Boboshevo	Boboshevo	Kyustendil	Rural areas	955	4532	Yes	Yes
22.	Bogolin	Satovcha	Blagoevgrad	Rural areas	425	4707	Yes	Yes
23.	Bozhurishte	Bozhurishte	Sofia	Urban areas - Towns and suburbs	5737	5027	not	not
24.	Boynitsa	Boynitsa	Vidin	Rural areas	310	5195	Yes	Yes
25.	Novo selo	Stamboliyski	Plovdiv	Urban areas - Towns and suburbs	1859	5221	not	not
26.	Bolyarovo	Bolyarovo	Yambol	Rural areas	991	5284	Yes	not
27.	Bolyartsi	Sadovo	Plovdiv	Rural areas	2708	5339	Yes	Yes
28.	Borino	Borino	Smolyan	Rural areas	1695	5462	Yes	Yes
29.	Borovan	Borovan	Vratsa	Rural areas	1829	5548	Yes	not
30.	Borovo	Borovo	Ruse	Rural areas	1552	5611	Yes	not
31.	Boyadzhik	Tundzha	Yambol	Rural areas	1063	5952	Yes	Yes
32.	Bradvary	Silistra	Silistra	Urban areas - Towns and suburbs	837	6032	Yes	Yes
33.	Branipole	Rodopi	Plovdiv	Rural areas	2692	6077	not	not
34.	Bratsigovo	Bratsigovo	Pazardzhik	Rural areas	3336	6207	not	Yes
35.	Breznik	Breznik	Pernik	Rural areas	3527	6286	Yes	Yes

36.	Breznitsa	Gotse Delchev	Blagoevgrad	Urban areas - Towns and suburbs	3326	6306	Yes	Yes
37.	Brezovo	Brezovo	Plovdiv	Rural areas	1563	6361	Yes	Yes
38.	Brenica	Knezha	Pleven	Urban areas - Towns and suburbs	1652	6375	Yes	Yes
39.	Brest	Gulyantsi	Pleven	Rural areas	1444	6402	Yes	Yes
40.	Brestnik	Rodopi	Plovdiv	Rural areas	2130	6447	not	not
41.	Brestovitsa	Rodopi	Plovdiv	Rural areas	3089	6505	not	Yes
42.	Brusartsi	Brusartsi	Montana	Rural areas	873	6570	Yes	not
43.	Bukovlak	Pleven	Pleven	Urban areas - Cities	3069	6999	not	not
44.	Bhutan	Kozloduy	Vratsa	Urban areas - Towns and suburbs	2511	7116	Yes	Yes
45.	Buhovo	Sofia (capital city)	Sofia (capital city)	Urban areas - Cities	2540	7140	Yes	not
46.	Bazan	Ruse	Ruse	Urban areas - Cities	996	7231	Yes	Yes
47.	Balgarski izvor	Teteven	Lovech	Rural areas	1125	7357	Yes	Yes
48.	Byaga	Bratsigovo	Pazardzhik	Rural areas	1244	7586	Yes	Yes
49.	Byala	Byala	Varna	Rural areas	2053	7598	not	not
50.	Byala Reka	Varbitsa	Shumen	Rural areas	954	7692	Yes	Yes
51.	Byala Slatina	Byala Slatina	Vratsa	Rural areas	8975	7702	not	not
52.	Vedrare	Karlovo	Plovdiv	Rural areas	933	10291	Yes	Yes
53.	Veselinovo	Tundzha	Yambol	Rural areas	1289	10776	not	not
54.	Vetovo	Vetovo	Ruse	Rural areas	3566	10803	Yes	Yes
55.	Vetren	Maglizh	Stara Zagora	Rural areas	967	10848	Yes	Yes
56.	Vrachesh	Botevgrad	Sofia	Urban areas - Cities	3344	12283	not	Yes
57.	Valkosel	Satovcha	Blagoevgrad	Rural areas	2394	12499	Yes	Yes
58.	Valnary	Nikola Kozlevo	Shumen	Rural areas	1320	12509	Yes	Yes
59.	Valchedrum	Valchedrum	Montana	Rural areas	2825	12543	Yes	not

60.	Varbitsa	Pleven	Pleven	Urban areas - Cities	601	12752	not	Yes
61.	Varbitsa	Varbitsa	Shumen	Rural areas	2370	12766	Yes	Yes
62.	Varshets	Varshets	Montana	Urban areas - Towns and suburbs	5308	12961	not	Yes
63.	Gabrovnitsa	Montana	Montana	Urban areas - Towns and suburbs	1003	14180	Yes	Yes
64.	Gavrailovo	Sliven	Sliven	Urban areas - Cities	933	14275	Yes	Yes
65.	Galata	Teteven	Lovech	Rural areas	2366	14386	Yes	Yes
66.	Galiche	Byala Slatina	Vratsa	Rural areas	1287	14406	Yes	Yes
67.	Lakatnik	Svoge	Sofia	Rural areas	981	14475	Yes	Yes
68.	General Toshevo	General Toshevo	Dobrich	Rural areas	5524	14711	not	not
69.	Georgi Damyanovo	Georgi Damyanovo	Montana	Rural areas	333	14773	Yes	Yes
70.	Glodzhevo	Vetovo	Ruse	Rural areas	2763	15151	Yes	Yes
71.	Godech	Godech	Sofia	Rural areas	3984	15309	Yes	Yes
72.	Golesh	Kaynasrdzha	Silistra	Rural areas	1087	15566	Yes	Yes
73.	Golyamo Vranovo	Slivo pole	Ruse	Rural areas	1099	15829	Yes	Yes
74.	Golyamo Krushevo	Bolyarovo	Yambol	Rural areas	147	15881	Yes	Yes
75.	Golyamo novo	Targovishte	Targovishte	Urban areas - Towns and suburbs	744	15895	Yes	Yes
76.	Shivachevo	Tvarditsa	Sliven	Rural areas	3705	15944	Yes	Yes
77.	Septemvri	Valchedrum	Montana	Rural areas	861	16184	Yes	Yes
78.	Gorna Mitropolia	Dolna Mitropolia	Pleven	Rural areas	1466	16345	Yes	Yes
79.	Gorna Oryahovitsa	Gorna Oryahovitsa	Veliko Tarnovo	Urban areas - Towns and suburbs	25764	16359	not	not
80.	Gorni Dabnik	Pleven	Pleven	Urban areas - Cities	1232	16537	Yes	Yes
81.	Gradec	Vidin	Vidin	Urban areas - Cities	1040	17422	Yes	Yes

82.	Gradec	Kotel	Sliven	Rural areas	3023	17436	Yes	Yes
83.	Gramada	Gramada	Vidin	Rural areas	945	17645	Yes	Yes
84.	Grivitsa	Pleven	Pleven	Urban areas - Cities	1460	17854	not	not
85.	Grozdyovo	Dolni Chiflik	Varna	Rural areas	1981	17912	Yes	Yes
86.	Gulyantsi	Gulyantsi	Pleven	Rural areas	2556	18099	Yes	Yes
87.	Gurkovo	Gurkovo	Stara Zagora	Rural areas	2452	18157	Yes	Yes
88.	Galabovo	Galabovo	Stara Zagora	Urban areas - Towns and suburbs	6845	18280	not	not
89.	Garmen	Garmen	Blagoevgrad	Rural areas	2136	18366	Yes	Yes
90.	Debren	Garmen	Blagoevgrad	Rural areas	2383	20331	Yes	Yes
91.	Devin	Devin	Smolyan	Rural areas	5442	20465	not	Yes
92.	Devnya	Devnya	Varna	Urban areas - Towns and suburbs	6526	20482	not	not
93.	Dermantsi	Lukovit	Lovech	Rural areas	1866	20688	Yes	Yes
94.	Dzhebel	Dzhebel	Kardzhali	Rural areas	3081	20746	not	not
95.	Divotino	Pernik	Pernik	Urban areas - Cities	1637	20986	not	Yes
96.	Dinkata	Lesichovo	Pazardzhik	Rural areas	1077	21172	Yes	Yes
97.	Dobromir	Ruen	Burgas	Rural areas	986	21614	Yes	Yes
98.	Dolen	Zlatograd	Smolyan	Urban areas - Towns and suburbs	993	21871	Yes	Yes
99.	Dolni chiflik	Dolni chiflik	Varna	Rural areas	5400	21912	not	not
100.	Dolna Banya	Dolna Banya	Sofia	Rural areas	4202	22006	Yes	not
101.	Dolna Mitropolia	Dolna Mitropolia	Pleven	Rural areas	2643	22215	not	not
102.	Dolni Tsiber	Valchedrum	Montana	Rural areas	1400	22530	Yes	Yes
103.	Dolno Dryanovo	Garmen	Blagoevgrad	Rural areas	1157	22616	Yes	Yes
104.	Dolno Osenovo	Simitli	Blagoevgrad	Rural areas	1423	22753	Yes	Yes
105.	Dospat	Dospat	Smolyan	Rural areas	1968	23025	Yes	Yes

106.	Draganovo	Gorna Oryahovitsa	Veliko Tarnovo	Urban areas - Towns and suburbs	1882	23100	Yes	Yes
107.	Dragoman	Dragoman	Sofia	Rural areas	2886	23409	Yes	not
108.	Drenovets	Ruzhintsi	Vidin	Rural areas	1078	23672	Yes	not
109.	Dryanovo	Dryanovo	Gabrovo	Urban areas - Towns and suburbs	5692	23947	not	not
110.	Dabnitsa	Garmen	Blagoevgrad	Rural areas	1531	24267	Yes	Yes
111.	Dabova Mahala	Ruzhintsi	Vidin	Rural areas	93	24298	Yes	Yes
112.	Dabovo	Maglizh	Stara Zagora	Rural areas	1139	24342	Yes	Yes
113.	Dalboki	Stara Zagora	Stara Zagora	Urban areas - Cities	1155	24482	not	Yes
114.	Dalbok izvor	Parvomay	Plovdiv	Rural areas	1085	24493	Yes	Yes
115.	Eleshnitsa	Razlog	Blagoevgrad	Urban areas - Towns and suburbs	1140	27293	Yes	Yes
116.	Zavet	Zavet	Razgrad	Rural areas	2311	30065	Yes	not
117.	Zavoy	Tundzha	Yambol	Rural areas	989	30096	Yes	Yes
118.	Zemen	Zemen	Pernik	Rural areas	1188	30778	Yes	Yes
119.	Zetyovo	Chirpan	Stara Zagora	Urban areas - Towns and suburbs	1089	30819	not	Yes
120.	Zlatar	Veliki Preslav	Shumen	Urban areas - Towns and suburbs	882	30942	Yes	Yes
121.	Zlataritsa	Zlataritsa	Veliko Tarnovo	Rural areas	1907	30962	Yes	Yes
122.	Ivaylo	Pazardzhik	Pazardzhik	Urban areas - Cities	2068	32010	not	not
123.	Ivaylovgrad	Ivaylovgrad	Haskovo	Rural areas	2875	32024	Yes	Yes
124.	Ivanski	Shumen	Shumen	Urban areas - Cities	1192	32158	Yes	Yes
125.	Iganovo	Karlovo	Plovdiv	Rural areas	511	32226	Yes	Yes

126.	Izvorsko	Aksakovo	Varna	Urban areas - Towns and suburbs	784	32490	Yes	Yes
127.	Smolevo	Yakoruda	Botevgrad	Rural areas	500	32603	Yes	Yes
128.	Iskra	Sitovo	Silistra	Rural areas	1751	32839	Yes	Yes
129.	Iskrets	Svoge	Sofia	Rural areas	1701	32843	Yes	Yes
130.	Isperih	Isperih	Razgrad	Rural areas	7274	32874	not	not
131.	Isperihovo	Bratsigovo	Pazardzhik	Rural areas	1283	32888	Yes	Yes
132.	Ihtiman	Ihtiman	Sofia	Urban areas - Towns and suburbs	12638	32901	not	not
133.	Kaloyanovo	Kaloyanovo	Plovdiv	Rural areas	2182	35523	Yes	not
134.	Kamburovo	Omurtag	Targovishte	Rural areas	947	35643	Yes	Yes
135.	Kameno	Kameno	Burgas	Rural areas	3626	35883	not	not
136.	Kaolinovo	Kaolinovo	Shumen	Rural areas	1296	36079	Yes	Yes
137.	Karadzhovo	Sadovo	Plovdiv	Rural areas	1093	36244	Yes	Yes
138.	Karlovo	Karlovo	Plovdiv	Rural areas	19373	36498	not	not
139.	Kermen	Sliven	Sliven	Urban areas - Cities	1426	36779	Yes	Yes
140.	Kilifarevo	Veliko Tarnovo	Veliko Tarnovo	Urban areas - Cities	1700	36837	not	Yes
141.	Kirkovo	Kirkovo	Kardzhali	Rural areas	670	36926	Yes	Yes
142.	Kirchevo	Ugarchin	Lovech	Rural areas	986	36943	Yes	Yes
143.	Knyazheva Mahala	Ruzhintsi	Vidin	Rural areas	122	37397	Yes	Yes
144.	Kozloduy	Kozloduy	Vratsa	Urban areas - Towns and suburbs	10916	37798	not	not
145.	Koilovci	Pleven	Pleven	Urban areas - Cities	800	37856	Yes	not
146.	Komarevo	Dolna Mitropolia	Pleven	Rural areas	924	38145	Yes	Yes
147.	Koprivshtitsa	Koprivshtitsa	Sofia	Rural areas	1898	38558	Yes	Yes
148.	Korten	Nova Zagora	Sliven	Urban areas - Towns and suburbs	1382	38683	not	Yes

149.	Kostenets	Kostenets	Sofia	Urban areas - Towns and suburbs	3154	38916	not	not
150.	Kostievo	Maritsa	Plovdiv	Rural areas	1789	38950	not	Yes
151.	Kostinbrod	Kostinbrod	Sofia	Urban areas - Towns and suburbs	11759	38978	not	not
152.	Kotel	Kotel	Sliven	Rural areas	4795	39030	Yes	Yes
153.	Kochan	Satovcha	Blagoevgrad	Rural areas	2079	39089	Yes	Yes
154.	Kocherinovo	Kocherinovo	Kyustendil	Rural areas	1938	39116	Yes	not
155.	Kraishte	Belitsa	Blagoevgrad	Rural areas	2406	39270	Yes	Yes
156.	Krepost	Dimitrovgrad	Haskovo	Urban areas - Towns and suburbs	1344	39668	not	Yes
157.	Krivodol	Krivodol	Vratsa	Rural areas	2600	39846	Yes	not
158.	Krichim	Krichim	Plovdiv	Urban areas - Towns and suburbs	7175	39921	Yes	Yes
159.	Krumovgrad	Krumovgrad	Kardzhali	Rural areas	4917	39970	Yes	Yes
160.	Krupnik	Simitli	Blagoevgrad	Rural areas	2018	40052	Yes	Yes
161.	Krushari	Krushari	Dobrich	Rural areas	981	40097	Yes	Yes
162.	Krushovitsa	Mizia	Vratsa	Rural areas	1262	40200	Yes	Yes
163.	Krushovitsa	Dolni Dabnik	Pleven	Rural areas	1203	40213	Yes	Yes
164.	Kubrat	Kubrat	Razgrad	Rural areas	5687	40422	not	not
165.	Kurtovo Konare	Stamboliyski	Plovdiv	Urban areas - Towns and suburbs	2377	40717	not	not
166.	Karnare	Karlovo	Plovdiv	Rural areas	852	40939	Yes	Yes
167.	Klimentovo	PolskiTrambesh	Veliko Tarnovo	Rural areas	569	41246	not	Yes
168.	Levski	Levski	Pleven	Rural areas	7387	43236	not	not
169.	Lesichovo	Lesichovo	Pazardzhik	Rural areas	632	43369	Yes	Yes
170.	Letnitsa	Letnitsa	Lovech	Rural areas	2675	43476	Yes	not

171.	Lilyak	Targovishte	Targovishte	Urban areas - Towns and suburbs	842	43685	not	not
172.	Lilyache	Vratsa	Vratsa	Urban areas - Cities	694	43712	Yes	Yes
173.	Litakovo	Botevgrad	Sofia	Urban areas - Towns and suburbs	1844	43904	Yes	Yes
174.	Lom	Lom	Montana	Urban areas - Towns and suburbs	16297	44238	not	not
175.	Lukovit	Lukovit	Lovech	Rural areas	7626	44327	not	not
176.	Lazhnitsa	Gotse Delchev	Blagoevgrad	Urban areas - Towns and suburbs	1608	44416	Yes	Yes
177.	Lyuben Karavelovo	Aksakovo	Varna	Urban areas - Towns and suburbs	1520	44519	Yes	Yes
178.	Lyulyakovo	Ruen	Burgas	Rural areas	1586	44690	Yes	Yes
179.	Lyaskovets	Lyaskovets	Veliko Tarnovo	Urban areas - Towns and suburbs	6821	44793	not	not
180.	Madzharovo	Madzharovo	Haskovo	Rural areas	475	46084	Yes	Yes
181.	Malevo	Haskovo	Haskovo	Urban areas - Cities	1076	46293	not	Yes
182.	Malko Tarnovo	Malko Tarnovo	Burgas	Rural areas	1611	46663	Yes	Yes
183.	Malorad	Borovan	Vratsa	Rural areas	1580	46810	Yes	Yes
184.	Marikostinovo	Petrich	Blagoevgrad	Urban areas - Towns and suburbs	1109	47189	Yes	Yes
185.	Marino pole	Petrich	Blagoevgrad	Urban areas - Towns and suburbs	238	47247	Yes	Yes

186.	Marten	Ruse	Ruse	Urban areas - Cities	3444	47336	not	Yes
187.	Merichleri	Dimitrovgrad	Haskovo	Urban areas - Towns and suburbs	1363	47843	Yes	Yes
188.	Mizia	Mizia	Vratsa	Rural areas	2373	48043	Yes	not
189.	Mirkovo	Mirkovo	Sofia	Rural areas	1524	48324	Yes	Yes
190.	Mihaylovo	Hayredin	Vratsa	Rural areas	862	48492	Yes	Yes
191.	Tsarevo	Tsarevo	Burgas	Urban areas - Towns and suburbs	5456	48619	not	not
192.	Momchilgrad	Momchilgrad	Kardzhali	Rural areas	7313	48996	not	not
193.	Mosomishte	Gotse Delchev	Blagoevgrad	Urban areas - Towns and suburbs	1926	49432	not	not
194.	Maglen	Aytos	Burgas	Urban areas - Towns and suburbs	1170	49477	Yes	Yes
195.	Maglizh	Maglizh	Stara Zagora	Rural areas	2990	49494	Yes	not
196.	Mikrevo	Strumyani	Blagoevgrad	Rural areas	2112	49686	Yes	Yes
197.	Negovan	Sofia	Sofia	Urban areas - Cities	1728	51250	not	not
198.	Nikolaevo	Nikolaevo	Stara Zagora	Rural areas	2582	51648	Yes	Yes
199.	Nikola Kozlevo	Nikola Kozlevo	Shumen	Rural areas	675	51651	Yes	Yes
200.	Nikopol	Nikopol	Pleven	Rural areas	2298	51723	Yes	not
201.	Nova mahala	Batak	Pazardzhik	Rural areas	1697	51874	Yes	Yes
202.	Novachene	Nikopol	Pleven	Rural areas	865	51932	Yes	Yes
203.	Novi Han	Elin Pelin	Sofia	Rural areas	3343	52012	not	not
204.	Novo Delchevo	Sandanski	Blagoevgrad	Urban areas - Towns and suburbs	1000	52074	not	Yes
205.	Apriltsi	Apriltsi	Lovech	Urban areas - Towns and suburbs	2425	52218	Yes	Yes

206.	Obretennik	Borovo	Ruse	Rural areas	875	53117	Yes	not
207.	Ovoshtnik	Kazanlak	Stara Zagora	Urban areas - Towns and suburbs	1578	53179	not	not
208.	Ognyanovo	Garmen	Blagoevgrad	Rural areas	1558	53326	Yes	Yes
209.	Opaka	Opaka	Targovishte	Rural areas	2263	53552	Yes	Yes
210.	Opan	Opan	Stara Zagora	Rural areas	264	53576	Yes	Yes
211.	Orehovitsa	Dolna Mitropolia	Pleven	Rural areas	1047	53655	Yes	Yes
212.	Oreshak	Troyan	Lovech	Urban areas - Towns and suburbs	1868	53707	not	not
213.	Orizovo	Bratya Daskalovi	Stara Zagora	Rural areas	1299	53850	Yes	Yes
214.	Orlyak	Tervel	Dobrich	Rural areas	968	53953	Yes	Yes
215.	Oryahovo	Oryahovo	Vratsa	Rural areas	3787	54020	Yes	not
216.	Pamukchii	Novi Pazar	Shumen	Urban areas - Towns and suburbs	1021	55292	not	Yes
217.	Perushtitsa	Perushtitsa	Plovdiv	Urban areas - Towns and suburbs	4225	55909	Yes	Yes
218.	Petko Slaveykov	Sevlievo	Gabrovo	Urban areas - Towns and suburbs	858	56037	Yes	Yes
219.	Petarch	Kostinbrod	Sofia	Urban areas - Towns and suburbs	2162	56215	Yes	Yes
220.	Peshtera	Peshtera	Pazardzhik	Urban areas - Towns and suburbs	12642	56277	not	not
221.	Pyrgovo	Ivanovo	Ruse	Rural areas	1243	56397	Yes	Yes
222.	Planinitsa	Ruen	Burgas	Rural areas	1273	56647	Yes	Yes
223.	Plachkovtsi	Tryavna	Gabrovo	Urban areas - Towns and suburbs	1276	56719	Yes	Yes

224.	Pletena	Satovcha	Blagoevgrad	Rural areas	1427	56740	Yes	Yes
225.	Pomorie	Pomorie	Burgas	Rural areas	12829	57491	not	not
226.	Popovo	Popovo	Targovishte	Urban areas - Towns and suburbs	12709	57649	not	not
227.	Pordim	Pordim	Pleven	Rural areas	1584	57772	Yes	Yes
228.	Pravda	Dulovo	Silistra	Rural areas	1382	57995	Yes	Yes
229.	Pravets	Pravets	Sofia	Rural areas	3605	58030	Yes	Yes
230.	Primorsko	Primorsko	Burgas	Rural areas	2786	58356	not	not
231.	Professor Ishirkovo	Silistra	Silistra	Urban areas - Towns and suburbs	928	58699	Yes	Yes
232.	Parvomay	Parvomay	Plovdiv	Rural areas	11283	59080	not	not
233.	Ravnets	Burgas	Burgas	Urban areas - Cities	1277	61145	Yes	Yes
234.	Radanovo	Polski Trambesh	Veliko Tarnovo	Rural areas	1371	61279	not	not
235.	Radinovo	Maritsa	Plovdiv	Rural areas	819	61412	not	Yes
236.	Radnevo	Radnevo	Stara Zagora	Urban areas - Towns and suburbs	10373	61460	not	not
237.	Rakitovo	Rakitovo	Pazardzhik	Urban areas - Towns and suburbs	7012	62004	not	not
238.	Rakovski	Razgrad	Razgrad	Urban areas - Towns and suburbs	1485	62089	Yes	Yes
239.	Resen	Veliko Tarnovo	Veliko Tarnovo	Urban areas - Cities	1715	62517	Yes	Yes
240.	Rila	Rila	Kyustendil	Rural areas	1985	62671	Yes	Yes
241.	Roza	Tundzha	Yambol	Rural areas	1027	62921	Yes	Yes
242.	Rozino	Karlovo	Plovdiv	Rural areas	4316	62949	Yes	Yes
243.	Roman	Roman	Vratsa	Rural areas	2331	62997	Yes	Yes
244.	Rudozem	Rudozem	Smolyan	Rural areas	3214	63207	Yes	Yes
245.	Ruzhintsi	Ruzhintsi	Vidin	Rural areas	706	63255	Yes	not

246.	Ruyno	Dulovo	Silistra	Rural areas	771	63286	Yes	Yes
247.	Ryahovo	Slivo pole	Ruse	Rural areas	1175	63668	Yes	Yes
248.	Samokov	Samokov	Sofia	Urban areas - Towns and suburbs	24186	65231	not	not
249.	Samuilovo	Sliven	Sliven	Urban areas - Cities	2073	65303	Yes	Yes
250.	Sandrovo	Ruse	Ruse	Urban areas - Cities	1251	65348	Yes	Yes
251.	Sapareva Banya	Sapareva Banya	Kyustendil	Rural areas	3453	65365	Yes	Yes
252.	Satovcha	Satovcha	Blagoevgrad	Rural areas	1686	65440	Yes	Yes
253.	Sborishte	Tvarditsa	Sliven	Rural areas	1940	65499	Yes	Yes
254.	Svetlen	Popovo	Targovishte	Urban areas - Towns and suburbs	657	65557	Yes	Yes
255.	Svetovrachene	Sofia	Sofia	Urban areas - Cities	2214	65601	Yes	Yes
256.	Svidnya	Svoge	Sofia	Rural areas	967	65663	Yes	Yes
257.	Svishtov	Svishtov	Veliko Tarnovo	Urban areas - Towns and suburbs	17940	65766	not	not
258.	Svoge	Svoge	Sofia	Rural areas	7029	65869	Yes	Yes
259.	Seliminovo	Sliven	Sliven	Urban areas - Cities	1467	66041	Yes	Yes
260.	Semerdzhievo	Ruse	Ruse	Urban areas - Cities	878	66158	Yes	Yes
261.	Senovo	Vetovo	Ruse	Rural areas	1064	66229	Yes	Yes
262.	Septembvri	Septemvri	Pazardzhik	Rural areas	6068	66264	not	not
263.	Slavyanovo	Pleven	Pleven	Urban areas - Cities	2809	67088	Yes	Yes
264.	Slivnitsa	Slivnitsa	Sofia	Urban areas - Towns and suburbs	6870	67372	not	not
265.	Smyadovo	Smyadovo	Shumen	Rural areas	3383	67708	Yes	Yes

266.	Sozopol	Sozopol	Burgas	Rural areas	4022	67800	not	not
267.	Sopot	Sopot	Plovdiv	Urban areas - Towns and suburbs	7353	68080	not	not
268.	Stavertsi	Dolna Mitropolia	Pleven	Rural areas	1380	68607	Yes	Yes
269.	Startsevo	Zlatograd	Smolyan	Urban areas - Towns and suburbs	1891	69105	Yes	Yes
270.	Stefanovo	Dobrich - selska	Dobrich	Rural areas	761	69242	not	Yes
271.	Stojer	Dobrich - selska	Dobrich	Rural areas	1088	69300	not	Yes
272.	Strazhitsa	Strazhitsa	Veliko Tarnovo	Rural areas	3775	69633	Yes	not
273.	Straldzha	Straldzha	Yambol	Rural areas	4955	69660	not	not
274.	Stratsin	Pomorie	Burgas	Rural areas	1213	69746	Yes	Yes
275.	Stroevo	Maritsa	Plovdiv	Rural areas	1674	69874	Yes	Yes
276.	Suvorovo	Suvorovo	Varna	Rural areas	3884	70175	Yes	not
277.	Sungurlare	Sungurlare	Burgas	Rural areas	2726	70247	Yes	not
278.	Suhindol	Suhindol	Veliko Tarnovo	Rural areas	1436	70295	Yes	Yes
279.	Saedinenie	Saedinenie	Plovdiv	Rural areas	5018	70528	not	not
280.	Sarnitsa	Sarnitsa	Pazardzhik	Rural areas	3353	70648	Yes	Yes
281.	Strajets	Razgrad	Razgrad	Urban areas - Towns and suburbs	1232	70860	not	Yes
282.	Tvarditsa	Tvarditsa	Sliven	Rural areas	5571	72165	Yes	Yes
283.	Tervel	Tervel	Dobrich	Rural areas	4598	72271	not	not
284.	Tetovo	Ruse	Ruse	Urban areas - Cities	1440	72357	Yes	Yes
285.	Timarevo	Hotrino	Shumen	Rural areas	817	72401	Yes	Yes
286.	Todor Ikonomovo	Kaolinovo	Shumen	Rural areas	1894	72549	Yes	Yes
287.	Topolovo	Asenovgrad	Plovdiv	Urban areas - Towns and suburbs	2381	72789	Yes	Yes
288.	Topolchane	Sliven	Sliven	Urban areas - Cities	3374	72816	Yes	not
289.	Treklyano	Treklyano	Kyustendil	Rural areas	198	73047	Yes	Yes

290.	Trudovets	Botevgrad	Sofia	Urban areas - Towns and suburbs	2971	73256	not	not
291.	Tran	Tran	Pernik	Rural areas	2176	73273	Yes	Yes
292.	Tryavna	Tryavna	Gabrovo	Urban areas - Towns and suburbs	7180	73403	not	Yes
293.	Tarnava	Byala Slatina	Vratsa	Rural areas	1992	73643	not	Yes
294.	Turnak	Byala Slatina	Vratsa	Rural areas	1161	73660	Yes	Yes
295.	Topolovets	Ruzhintsi	Vidin	Rural areas	144	73924	Yes	not
296.	Ugarchin	Ugarchin	Lovech	Rural areas	2169	75054	Yes	Yes
297.	Uzundzhovo	Haskovo	Haskovo	Urban areas - Cities	1689	75085	not	Yes
298.	Ustina	Rodopi	Plovdiv	Rural areas	1959	75188	Yes	Yes
299.	Hadzhidimitrovo	Kazanlak	Stara Zagora	Urban areas - Towns and suburbs	1504	77027	Yes	Yes
300.	Hadzhidimovo	Hadzhidimovo	Blagoevgrad	Rural areas	2347	77058	Yes	Yes
301.	Hayredin	Hayredin	Vratsa	Rural areas	1091	77102	Yes	Yes
302.	Hisarya	Hisarya	Plovdiv	Urban areas - Towns and suburbs	5987	77270	not	not
303.	Tsar Kaloyan	Tsar Kaloyan	Razgrad	Rural areas	2735	77308	Yes	not
304.	Gorno Kraishte	Belitsa	Blagoevgrad	Rural areas	1191	77596	Yes	Yes
305.	Tsarev Brod	Shumen	noisy	Urban areas - Cities	1163	78104	Yes	Yes
306.	Tsenovo	Tsenovo	Ruse	Rural areas	1157	78361	Yes	not
307.	Tsonevo	Dalgopol	Varna	Rural areas	1814	78519	Yes	Yes
308.	Chavdar	Chavdar	Sofia	Rural areas	1161	80011	Yes	Yes
309.	Chelopech	Chelopech	Sofia	Rural areas	1443	80323	not	Yes
310.	Chepelare	Chepelare	Smolyan	Urban areas - Towns and suburbs	4199	80371	not	Yes
311.	Chepintsi	Rudozem	Smolyan	Rural areas	1808	80399	Yes	Yes
312.	Chepintsi	Sofia (capital)	Sofia (capital)	Urban areas - Cities	2544	80409	not	not

313.	Cherven Breg	Cherven Breg	Pleven	Rural areas	10533	80501	not	not
314.	Chernogorovo	Pazardzhik	Pazardzhik	Urban areas - Cities	1753	81089	Yes	Yes
315.	Chernolik	Dulovo	Silistra	Rural areas	1232	81150	Yes	Yes
316.	Chiprovtsi	Chiprovtsi	Montana	Rural areas	1338	81390	Yes	Yes
317.	Chirpan	Chirpan	Stara Zagora	Urban areas - Towns and suburbs	12830	81414	not	not
318.	Sheinovo	Kazanlak	Stara Zagora	Urban areas - Towns and suburbs	1524	83106	Yes	Yes
319.	Yablanovo	Kotel	Sliven	Rural areas	2689	87031	Yes	Yes
320.	Yakimovo	Yakimovo	Montana	Rural areas	1419	87299	Yes	Yes
321.	Yakoruda	Yakoruda	Blagoevgrad	Rural areas	4789	87338	not	not
322.	Yarebitsa	Dulovo	Silistra	Rural areas	1118	87504	Yes	Yes
323.	Yasenkovo	Wreath	noisy	Rural areas	1576	87610	Yes	Yes
324.	Yasenovets	Razgrad	Razgrad	Urban areas - Towns and suburbs	2288	87624	Yes	Yes
325.	Yastrebovo	Ruse	Ruse	Urban areas - Cities	222	87700	Yes	not
326.	Yahinovo	Dupnitsa	Kyustendil	Urban areas - Towns and suburbs	1643	87727	not	not

1.3. Technical characteristics of the subsidised backhaul networks, including their desired level of performance, reliability, capacity or dimensioning.

The subsidised network will have the following technical characteristics:

New construction

2 HDPE pipes and one 96 FO cable with G.652 fibers. The subsidized network availability will be ~99,5% on the yearly level with SLA target up to 8 hours. The free HDPE pipe will be used to deploy additional fiber infrastructure by commercial operators.

In line with paragraph 113 of the EU Broadband State Aid Guidelines (2023/C 36/01) /Broadband Guidelines the financed backhaul network will be dimensioned in a way that it can support the needs of the future access networks to be deployed.

24 fibers will be reserved for the state network; 24 fibers will be reserved for the beneficiary of the targeted area; 2x24 fibers will be available for other operators.

In accordance with the technological neutrality principle the most suitable technologies are to be selected, additionally taking into account the characteristics and needs of the targeted areas.

Upgrade of existing networks

Whenever possible the potential beneficiaries will be obliged to use existing networks, either by laying cable in the existing empty pipes in line with milestone C7.R3: Creating a favorable investment environment or by using the capacity of the upgraded of copper networks or significantly older fiber, which is already not fully performant (Irrevocable Right of Use for the lifetime of the project). In order to avoid the subsidized backhaul network to become a bottleneck, the capacity of the existing networks and physical infrastructure will be significantly increased in order to accompany the deployment of performant new networks (paragraph 68 of the Broadband Guidelines).

The deployed cable will be 96 FO cable with G.652 fibers and the conditions of completely new deployment stated above will apply.

At the same time, such increase will not constitute unreasonable duplication of the existing networks and adjacent infrastructure because the measure will be implemented by number of means, such as: re-use of existing free ducts; deployment of brand new VHCNs, including in the areas with existing 24-fibre based networks, which are completely used, etc. Copper switch off is expected as an indirect effect of the deployment under the project. Copper networks are usually inner-cities. Therefore it could be expected that the roll out of high-speed connectivity to the rural areas (eligible BSs and city centers) followed by increased competition, will incentivize the incumbent to decommission the legacy copper networks.

Reuse of existing networks

In order to guarantee Strategic Objective 1: Comprehensive Enhancement of the Unified Electronic Communication Network, the chosen beneficiaries will have to guarantee at least 2

fibers for the State network, which will be supported through existing networks via Irrevocable Right of Use for the lifetime of the project.

In all three hypothesis the beneficiary will be obliged to provide maintenance and support for the state network free of charge for the next 20 years.

The subsidised networks under the State intervention represent a significant investment in backhaul infrastructure and therefore are „step change“ in the meaning of paragraph 19(p) and paragraph 112 of the Broadband Guidelines. The subsided networks will be a significant improvement which are going to bring substantial new investments in the broadband networks and significant new capabilities to the market in terms of broadband services availability, capacity and speed.

The State-funded backhaul network will be based on fibre solutions and additionally the capacity of the network will be dimensioned appropriately taking into account the specific situation in the target areas.

The backhaul network will be able to support the future deployment of both fixed and mobile networks. According to the European Commission's recommendations, established in the Digital Decade Report 2024, the focus of the measure will be the accelerated development of 5G networks in the future. In this regard, the potential beneficiaries will have to have acquired spectrum in 700 MHz, 800 MHz, 2.6 GHz, 3.5 GHz, 26 GHz.

In Bulgaria, there are 3 operators that have acquired spectrum and the measure will be design in order to strengthen the competition and guarantee affordable services for citizens and businesses.

Additionally, the State-funded backhaul network will use optical fibre to connect base stations which adequately will support the increasing needs of future mobile access networks. The fibre based solutions to be used under the measure will be capable to sustain the increasing needs related to 5G networks, e.g. ultra-low latency, high reliability, network slicing, etc.

Last but not least, the funded backhaul network represents a prerequisite for the deployment of future network solutions. This additionally will foster the competition and investments at the access level enabling access seekers to roll out new mobile access networks to offer connectivity services to end-users enabling them to have "maximum benefits in terms of choice, price and quality on the basis of effective competition" (art. 1, para 2, item (d) of the Directive (EU) 2018/1972 establishing the European Electronic Communications Code.

Socio-economic analysis

In order to foster completion and support the engagement of local business, the Bulgarian authorities plan to divide the country **to 6 project areas that correspond to the 6 planning regions.** This will allow on one hand to use the possibilities of centralized management of the permit procedures as set in the Spatial Development Act and on the other hand to establish manageable project areas. We are committed to make Bulgarian regions attractive places to live, effectively using their potential for sustainable growth, job creation, business and tourism, with preserved natural and cultural heritage.

For the period 2010-2020, there has been limited progress in bridging interregional disparities in the country. Despite the overall positive trend in all regions by 2020, five of the six regions at level 2 – North-West, North Central, South-East, South Central and North-East continue to be among the ten regions in the EU with the lowest GDP per capita values compared to the EU average.[3] In 2023, the economic activity rate remains below the national average in four of the regions, being higher only in North-West and North-East regions.

Changes in the demographic profile of the country show a persistent trend of population decrease - in the period 2008-2022 of 15.23%. By the end of 2022 the population of Bulgaria is 6 838 937.4 The NSI forecasts confirm the sustainability of the trend - in 2030 the population of Bulgaria is expected to decrease to 6 007 657 people, and in 2040 to 5 637 361 people. It is notable the rapid population decrease in the relatively shorter periods 2008-2011 by 3.72% and 2021-2022 by 5.72%. The population decrease during the period of the National Strategy for Regional Development (2012-2022) is 12%, with a particularly significant decrease in the last year, with about 40% mainly caused by the districts of the North Central Region and the North-East Region.[5]

The population of all regions of level 2 of the country is decreasing, with the most significant decrease in the period 2011-2022 in the three regions of Northern Bulgaria – North-West -19.7%, North Central -19.6% and North-East -14.4%. The population decrease in the South- West region for the period was 5.4%, followed by the South-East and South Central regions with 11.56 and 11.6% respectively.

By 2020, the North-West and North Central Regions do not meet the requirements of Regulation (EC) No 1059/2003 and are below the lower limit for a NUTS Level 2 region, and in 2030 the population of the North-East Region is also expected to be below the lower limit.[6] As of 2022, 15 of the 28 districts in the country included in the six regions do not meet the requirements of Regulation (EC) No 1059/2003, according to which the population in administrative units of level 3 should be at least 150 000. These are 4 districts in the North-West Region, 3 districts in the North Central Region, 3 districts in the North-East Region, 1 district in the South-East Region, 2 districts in the South-West Region and 1 district in the South Central Region.

Statistical regions	Total number of population for the country	In cities	In villages

[3] p. 53Final report on the implementation of the national strategy for regional development for the period 2012-2022 - https://www.strategy.bg/FileHandler.ashx?fileId=36784

[4] p.25 Final report on the implementation of the national strategy for regional development for the period 2012-2022 - https://www.strategy.bg/FileHandler.ashx?fileId=36784

[5] p.24 Final report on the implementation of the national strategy for regional development for the period 2012-2022- https://www.strategy.bg/FileHandler.ashx?fileId=36784

[6] p.44-45 Final report on the implementation of the national strategy for regional development for the period 2012-2022 - https://www.strategy.bg/FileHandler.ashx?fileId=36784

	6 446 596	**4 742 586**	**1 704 010**
North-West	667 763	424 863	242 900
North Central	683 347	455 223	228 124
North-East	825 009	614 806	210 203
Southeast	949 789	684 789	265 000
South West	2 017 861	1 691 076	326 785
South Central	1 302 828	871 829	431 000

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There is a clear need to address future measures more specifically to the particular economic and social problems of the regions, in the context of the common structural development challenges related to their competitiveness and their capacity to offer an attractive and sustainable environment for enterprises and local residents - technical and business infrastructure, functioning institutions, simplification of the business environment, technological readiness, human capital, development of research activities and their link to business, simplification of the business environment, capitalizing on the geostrategic location of each region.[7]

Key to the digitisation of the Bulgarian economy and public services will be the investments to deploy 5G mobile networks in the country. The vision for 5G is more than an evolution of mobile broadband services. These technologies will be a key enabler, contributing to the development of the future digital world as the next generation ubiquitous superfast broadband infrastructures. 5G will support transform processes in all economic sectors (public sector, education, integrated media content delivery, healthcare, research, energy, utilities, manufacturing, transport, automotive, audiovisual technologies, virtual reality (VR), gaming online, etc.) and will provide accessible, flexible, interactive, reliable and highly personalised services that should improve the life of every citizen. 5G for the cities will provide municipalities with a range of solutions for public challenges such as developing sustainable energy management, shaping sustainable mobility to ease the burden on transport infrastructure, mitigate the effects of demographic change or maintaining similar living conditions in rural areas. In particular, this means that with 5G, cities and municipalities will be able to deliver services and administration efficiently and effectively. Independent whether for parking management, public transport, traffic management, healthcare, the management of decentralised electricity disposal or municipal waste management, 5G can provide a solution to

[7] p.41 Final report on the implementation of the national strategy for regional development for the period 2012-2022 - https://www.strategy.bg/FileHandler.ashx?fileId=36784

many of the current challenges. Importantly, the opportunities and challenges of using this technology must be assessed on the basis of integrated and sustainable urban development objectives. Improved connectivity in rural areas. In most rural and remote areas, connectivity to the internet can play a significant role in preventing the digital divide, isolation and depopulation by reducing the cost of delivering goods and services, and partially compensating for remoteness. Businesses can reduce costs by videoconferencing, access to online administration, e-commerce or data storage in the cloud. Rural development and modern agriculture rely on increasingly on online applications supporting tourism, sensor-based crop monitoring and the use of drones in commerce and agriculture. All households, rural or urban, should have access to a minimum level of fixed or wireless connectivity. About to be considered adequate in 2025, connectivity will need to be at a much higher capacity than is currently the case. Building on the Programme's objectives in the area of Digital Agenda for Europe 2020, by 2025 all households should have 100 Mbps connectivity as we continue to develop the path towards providing higher data capacity. There is a growing understanding that broadband internet access is so important, that it should be seen as a utility of first necessity, alongside other utilities such as roads, water, electricity and gas. The positive socio-economic impact of providing access to VHCN also has social effects. Ensuring equal access to broadband infrastructure leads to reducing the economic and social exclusion of individuals and entire communities; and makes them active participants in the society. Significant social effects are expected from improving access to basic public services through the development of e-government, e-education, e-health, etc. The provision of high-speed Internet has a significant impact on increasing security of citizens and society and the reduction of the crimes. As a result quality of life of citizens.[8]

In areas where access to telecommunications is limited, local businesses and populations are disadvantaged. In highly urbanised areas, where users are concentrated, the market will build the infrastructure, as well as the national communications network. In sparsely populated or less economically developed areas, however, the private sector has no economic incentive to build broadband infrastructure and to ensure the development of on-line services.

North-West Region includes the districts of Pleven, Lovech, Vidin, Montana and Vratsa. It's area is 19 070 km². The capital is the city of Pleven. The region has the lowest-ranked economy in Bulgaria and the European Union. It additionally is the least developed planning region of Bulgaria. The region occupies the North-western part of the country and has a favourable geographical location with international transport corridors, including the river Danube. The Danube region has good cross-border opportunities.

The extremely unfavourable demographic situation in the region determines the existence of a number of problems, such as depopulation of the border and mountainous areas, deterioration of the age structure of the population and the quality of the workforce, whose number is constantly decreasing. The relative share of the urban population is lower than the national average.

The North-West is the region with the most significant negative demographic processes, the population decrease has a sustainable trend - in the period 2008-2020, the decrease is 26.4%.

[8] p. 201. Socio-economic analysis of the regions in the Republic of Bulgaria. Fourth stage. Part One – 2021

By the end of 2020, the population of the North-West Region is 720 172 people. The population of the region as of 2023 is 2 017 861, with 1 691 076 living in urban areas and 326 785 in rural areas. According to the NSI forecasts, by 2025 the population of the North-West Region is expected to be 634 909 people, and in 2030 - to decrease to 583 658 people.

North Central Region includes the districts of Veliko Tarnovo, Gabrovo, Razgrad, Ruse, Silistra and there are 36 municipalities, 50 cities and 998 villages. The area of the region is 14 974 sq. km, constituting 13.49 % of the country's territory. The population of the region is steadily decreasing. This is the result of active migration processes and negative natural growth. Population density is below average. The population is unevenly distributed over the territory. As of 31.12.2022, the population of the region is 825 009 people, corresponding to 10.64 % of the total population of the country. The average population density in the North Central Region is 45.84 p.m./km2 and is lower than the national average of 58.09 p.m./km2.The region has limited opportunities for population and labor force reproduction. The proportion of the population of working age is high compared to the national average. The North Central Region has 5 universities.

North-East Region includes the districts of Varna, Dobrich, Targovishte and Shumen. The area of the region is 14 487 sq. km, constituting 13.05% of the country's territory. It is the smallest in area of all the regions in the country. The population of the region as of 2023 is 825 009, with 614 806 living in urban areas and 210 203 in rural areas.The location of the region in the north-eastern part of Bulgaria gives it certain advantages over other regions in northern Bulgaria. The relief is hilly and flat with many flattened plateaus, which favours the development of agriculture and transport. The birth rate is higher than the national average, which determines the less pronounced negative natural growth. The share of urban population is high - 72.7%.

South Central Region includes the districts of Plovdiv, Pazardzhik, Kardzali, Haskovo Smolyan. The capital is Plovdiv, the second-largest city in Bulgaria. It is the second most important economical region of the country, which together with the South –West Region region produce almost two thirds of the national GDP. The area of the region is 22 365.1 km² or 20.1% of the country's territory. The territorial structure is as follows: the agricultural territories are 48.1%, the forest - 45.1%, and urban areas occupy only 3.9%. The population of the region as of 2023 is 1 302 828, with 871 829 living in urban areas and 431 000 in rural areas.

South-East Region includes the districts of Burgas, Stara Zagora, Sliven and Yambol. The South-East Region has been shaped by its favorable geographical position and natural conditions allowing the development of tourism, maritime transport and agriculture, as well as by the relatively more reserved demographic resources compared to other regions of Bulgaria. The region has an area of 14645.1 km2, or 13.2% of the country's territory. About 10% of the population of Bulgaria lives there. The population of the region as of 2023 is 1 302 828, with 871 829 living in urban areas and 431 000 in rural areas. The settlement network in the region consists of 486 settlements /26 cities and 460 villages/.

South–West Region includes the districts of Sofia (capital) and Sofia district, Blagoevgrad, Kyustendil, Pernik. It has an area of 20 306 km² and a population of about 2 017 861people. 1 691 076 people live in cities and 326 785 in villages.

The South West region is the only one region of the country where population numbers have remained relatively stable, with a population decline of less than 1.5% between 2008 and 2020. This is due to population growth in the Sofia (capital) district. The NSI forecasts confirm the sustainability of the trend, the population of the South West region to be below 200,000 by 2025. (p.45 Final report on the implementation of the national strategy for regional development for the period 2012-2022)

HOUSEHOLD INTERNET ACCESS (PERCENTAGES)	
Total	**88.5**
By statistical region	
North-West	82.6
North Central	85.4
North-East	86.5
South-East	87.5
South-West	92.8
South Central	87.8
By place of residence	
In cities	91.8
In villages	77.0
By household type	
Households without children	87.1

HOUSEHOLD INTERNET ACCESS (PERCENTAGES)	
Households with children	97.7

2. **Intervention Model, Duration, Budget and Aid Intensity**

The financial aid for this initiative will be administered through a **gap funding model**, employing direct grants awarded to selected undertakings via a competitive selection process. **The grants provided will constitute [a predefined percentage] of the total eligible costs incurred. The infrastructures developed under this program will be entirely owned by the beneficiaries.**

The total budget allocated for this financial aid is outlined in the National Recovery and Resilience Plan, with funds expected to be available until a specified date. The financial aid is designed to cover up to a specified maximum percentage of the eligible costs related to the construction of the infrastructure.

The justification for the stipulated aid intensity includes several key factors:

Challenging Geography:

- The orography of the target areas often complicates infrastructure deployment, necessitating substantial investment.
- The geographic challenges inherent in these regions escalate the costs associated with establishing and securing necessary infrastructures.

Low Profitability in Target Areas:

- Many of the targeted areas are located in rural and remote parts of the country, characterized by low population density.
- This demographic factor is crucial, particularly given the high operational costs associated with mobile networks, such as maintenance and electricity, which diminish the areas' profitability.

Need for Further Investment:

- Additional investment in active equipment shall be essential for realizing the full potential of the deployed solutions.

These factors collectively underscore the economic challenges faced in these areas, impacting the viability of investments needed to develop the infrastructure. The increased costs and reduced revenue potential compared to similar projects in more densely populated regions justify the need for higher aid intensity to ensure the successful implementation and sustainability of the infrastructure projects.

3. Cost Eligibility, Justification and Verification

The scope of cost eligibility for financial aid under this initiative is meticulously defined to ensure a structured and accountable deployment of the infrastructure, specifically focusing on the passive components of the fiber-based backhaul network essential for connecting base stations.

3.1. Eligible Costs

The following categories are designated as eligible for financial aid, as they are critical to the deployment of both passive and active components of the infrastructure:

- Infrastructure and Civil Engineering: Includes all construction and civil engineering works necessary for laying fiber optic cables and installing related infrastructure.
- Passive elements necessary for the deployment of dark fibre from the point of delivery) of traffic at the station site to the appropriate interconnection point based on the beneficiary's project.
- Active elements necessary for the lighting of the fiber.
- Active elements necessary for data traffic management.
- Complementary elements, incl. alternative power solutions.
- Equipment and Materials: Encompasses all hardware and materials required for the operation of the network, such as fiber optic cables, network interface devices, and other elements necessary for fiber lighting and data traffic management.
- Staff Costs: Covers salaries and wages of personnel directly involved in the project, from the planning and engineering phases through to the execution and operational stages.
- Additional Expenditures: Encompasses a broad range of ancillary costs including project preparation, permit acquisition and management, and procurement of equipment strictly necessary for project execution.

The establishment of irrevocable rights of use (IRUs) for both ducts and dark fibre shall be considered eligible costs. The IRU contract must cover the requirements and obligations laid down in the regulatory bases of the aid in order to achieve the objective of the project, as well as maintain during the period of compulsory activity of the subsidised infrastructure starting from the end of the execution of the project.

The fiber backhaul connections to be provided include both the physical infrastructure to be built and the passive elements of a dark fiber deployment, as well as the active elements necessary for the lighting of the fiber and for the management of the data traffic generated by the mobile telephone base stations to which the aforementioned fiber backhaul connection is provided at a given location.

3.2. Exclusions from Eligibility

However, there are specific exclusions within the eligibility criteria to ensure that the aid is utilized strictly for the intended purpose of enhancing network infrastructure:

- Legal and Regulatory Obligations: Costs incurred in fulfilling legal obligations or investments required to meet coverage obligations associated with the rights of use of spectrum are not covered by this financial aid. This stipulation ensures that the aid is not used to offset costs that should be covered by the spectrum license holders themselves.
- Coverage Obligations: Infrastructure developed with the aid of this financial support will not count towards meeting any coverage obligations tied to spectrum usage rights. Additionally, the call for proposals will mandate that aid beneficiaries formally commit in writing not to report the deployment of this infrastructure for fulfilling such coverage obligations.

These cost eligibility guidelines are designed to facilitate a transparent, efficient, and effective allocation and use of financial resources, thereby fostering the development of a robust and reliable digital infrastructure.

3.3. Justification and Verification

To ensure transparency and prudent financial management in the allocation and utilization of financial aid, a robust justification and verification framework will be established. This framework will facilitate the thorough review and validation of all expenses and payments associated with the financial aid. The following actions should be incorporated as good practice:

Verification of Supporting Documents

- Validation Against Originals: It is imperative to check that all supporting documents for expenses and payments correspond to the original documents.
- Compliance with Regulatory Requirements: The nature, quantity, and characteristics of the expenditures must be examined to ensure they align with the purposes for which the grant was awarded.

Consistency and Timing of Expenditures

- Eligible Period Verification: All expenditures and payments must be verified to ensure they are consistent with the commitments made, and that they are both incurred and paid within the eligible period. This step prevents the inclusion of ineligible expenses and ensures timely financial reporting and management.

Accurate and Detailed Accounting

- Consistency in Accounting Records: The beneficiary's accounting records must accurately reflect the revenue and expenditure related to the supported activity, including the payment of such expenditure. It is crucial to verify that these records are properly maintained and consistent with the financial transactions of the project.
- Detailed Accounting Practices: Beneficiaries must maintain detailed accounts that clearly identify the expenditure subject to the grant. This involves using differentiated accounts or sub-accounts to allow for adequate control of all transactions related to the subsidized project. Such detailed accounting ensures transparency and facilitates easier auditing and verification processes.

The implementation of the proposed measure will improve the quality of life and the working environment by creating conditions for local development. Information and communication technologies and internet are a key tool for the development of a data-driven economy, so the deployment of ultra-high speed broadband infrastructure will contribute to the objectives of bridging the digital divide.

In essence, the measure will implement activities for the construction of new infrastructure or upgrades for re-use of the existing to lay across fibre optic cables (including new cable infrastructure and active equipment strictly connected to the lightning up the fibre) for the extension of backhaul networks to settlements located in predominantly rural and remote areas identified as "white and grey" areas in terms of backhaul networks and to which the necessary broadband infrastructure is not available. The new fiber optic cable lines are intended for use both by public administrations, using part of the fibre in the laid fibre cables and part of the ports of the installed active devices (routers/switches), and commercially by operators to provide services to citizens and businesses in areas where adequate services are currently unavailable and where no such investments are planned by the incumbent operators in the market over the next three years. At the same time, in order to achieve economies of scale, the re-use of existing infrastructure will be mandated by upgrading networks which do not meet the technological requirements for very high capacity networks at the time of targeting.

The target areas are "white and grey" areas in terms of backhaul networks, which are economically unattractive areas and therefore have no prospect of deploying such networks through market mechanisms. The social analysis shows that in these regions the deployment of high-speed networks without intervention is unlikely to happen due due to an objective lack of return on investment. In line with the Broadband Guidelines and in line with the national strategy documents, this can only happen through intervention with public funding.

This will overcome the tendency to isolate certain population groups from the social and cultural life of the country. This approach aims to increase trust in internet services by enforcing standards of security and behavior that meet business standards. By providing ultra-high-speed infrastructure in the targeted areas, the use of the Internet will be greatly facilitated and encouraged for use by local enterprises to implement new business strategies and models, as well as to develop new digital services.

Prioritizing the connection of state and public institutions will be a prerequisite not only for the development and access to online services of local institutions, but also for greater opportunity for people living in rural areas. Beyond the commercial aspect of the measure, the focus will be on expanding the geographic coverage of the state fibre network to connect all municipal centers, including upgrading the technical infrastructure at existing points and building new reliable access points; providing the latest generation of active equipment at all layers of the network and for all locations, and dramatically increasing the capacity of the network to provide adequate and quality services to users; providing secure, etc. This objective is centered on the substantial upgrade and expansion of the Unified Electronic Communication Network of the state administration. The plan involves extending the connectivity across all 265 municipal centers to ensure secure, cyber-resilient communications and "clean pipe"

internet services, shielded from volumetric DDoS attacks, catering specifically to the requirements of state governance and national security.

The design will take into account the possible re-use of existing infrastructure and available capacity, owned by other organizations or operators thus avoiding duplication of routes, unless this would lead to higher redundancy.. All new routes will be built with a view to their potential use by the public and private sectors, and the duct and fibre capacities will be tailored to the growing needs of settlements and industrial sites along the routes concerned, as well as to the needs and future development potential of the areas through which they pass, so that fibre can be diverted to intermediate points along the routes as appropriate.

The Executive body will coordinate all interventions at State level and the use of public funds.

The network will be open and neutral. The business model corresponds to the open model for passive infrastructure. The network will be open in its passive layer and competing network and service providers will gain access to the physical links.

State Network - topology and functionality

Currently, EA EGI has built and maintains: an UECN comprising a fibre optic cable network of over 7,000 km with different capacities and types of fibre optic cables (acquired upon separation from Bulgarian Telecommunications Company EAD, upon integration with National Network of State Administration and built by State e-Government Agency (SEGA) and its predecessor structures) and 1,100 access devices located in centralised state structures as well as in regional and municipal administrations in all regional and some municipal centres.

The intervention targeting the state network will also cover the supply of active equipment as follows:

- Replacement of devices for the UECN in DWDM/Core/Aggregation layers, repair and equipping of existing locations;

- Replacement and supply of devices for the UECN in Access layer, repair and equipping of existing locations;

- Construction of a backup secure Internet node and management and monitoring system and means to protect the UECN;

- Supply of devices for UECN in Access layer for new locations in community centres;

- Replacement of MMF cables on existing routes in population centres and provision of fibre connectivity to universities and research institutes;

- Procurement and equipping of ultra high speed access nodes in 24 universities and research institutes.

The funding for activities is related to the supply and implementation of active equipment in existing and new locations and activities to ensure the necessary conditions for the normal operation of the equipment. The activities will only be carried out for public authorities. The Agency has received prior confirmation from the European Commission that these activities do

not constitute State aid and their implementation may start before receiving a positive decision on the notification of State aid under Article 108(3) of the Treaty on the Functioning of the European Union (TFEU), as well as for payments providing technical assistance under the investment in line with market conditions.

As stated in paragraph 14 of Decision SA.36234 (2013/N), already approved by the European Commission, the part of the 'self-supply' intervention should not be linked to the granting of State aid, since the public authorities (e.g. administration, local authorities, police, public hospitals belonging to the national health service, public schools) which will be affected by the planned intervention exercise a public function and do not carry out economic activities.

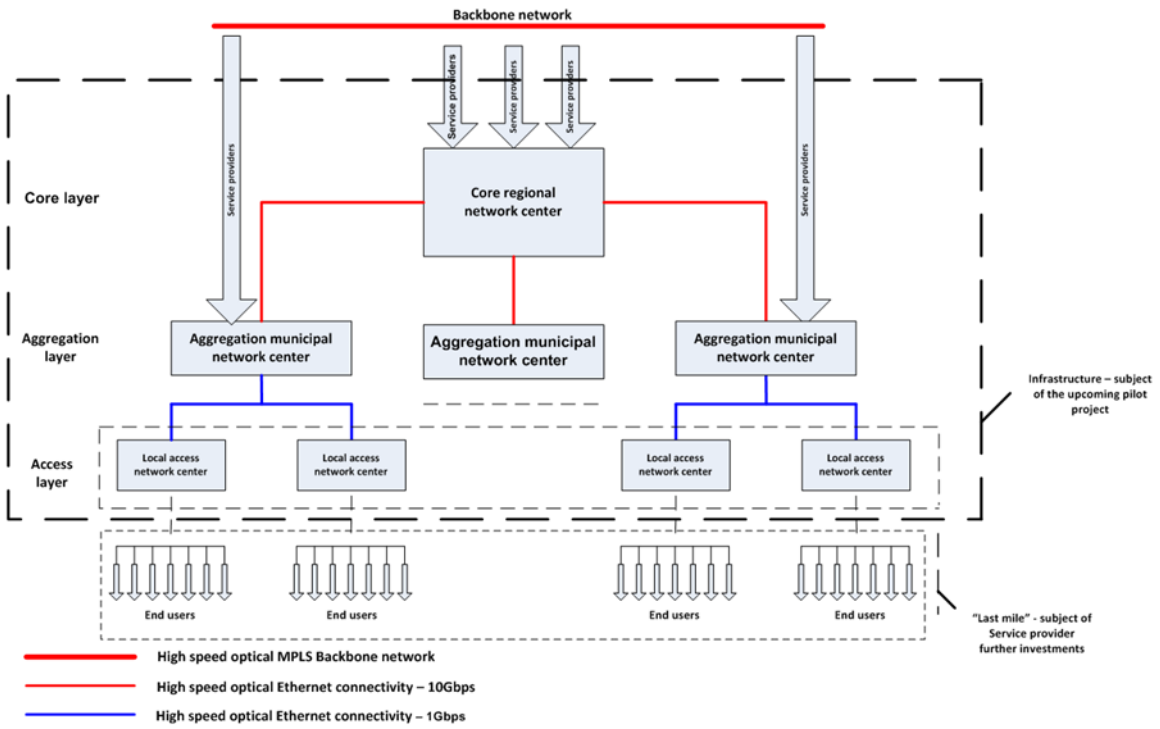
The state network communication infrastructure can be represented by the following three logical layers:

Core layer/Core layer - including regional network centres;

Aggregation layer - including municipal network centres;

Access layer - including administrative buildings and other centres of public life.

Under this concept, the logical model of the system would be as follows:



Core layer - Base layer

It aggregates traffic from the municipal network centres, connecting them to one or two regional network centres where the connections to the telecommunications service providers are made. Devices such as multi-function IP/MPLS routers with a high level of reliability are used at this layer. They have 1:1 redundancy of the main components and guarantee 99,99% reliability.

Devices in this layer must be able to provide VPN (Virtual Private Networks) services at the IP and Ethernet level, as well as high-speed Ethernet access. An important requirement for the devices is that they allow integration with other IP/MPLS networks to offer joint services with other operators.

Connection of the backbone layer to the aggregation layer will be established via fibre optic links providing gigabit speeds.

Aggregation layer

The aggregation layer is at the local network centers and combines traffic from network access points in urban areas, connecting them to specific local network centers. The devices in this layer are IP/MPLS multi-purpose routers, with high reliability, 1:1 redundancy and high-speed fibre connectivity. They are installed in the respective municipality's building in the community centres and serve as the link between the access layer and the backbone network. This will provide a flexible and functional connection between the layers while achieving better isolation between telecommunications service providers.

Access layer

The access layer in the municipal centers provides connectivity of administrative buildings and those of public importance (schools, hospitals, municipal centers, etc.) in the municipality. Devices from this layer are highly efficient with modern functionalities and a high degree of reliability of energy connectivity. The switches are connected to the switches in the municipal network center. Single mode optical cables are used for connection.

This aid measure is focused to connecting the backbone communication network as points of presence in the regional centres to the relevant municipal centres in the given area via a high-speed fibre line.

The deployment of infrastructure will be planned with a focus on the 140 municipal centres that are not yet connected to the UECN.

According to the Annex to the Council Implementing Decision of 28 April 2022 on the approval of the Assessment of the Recovery and Resilience Plan of the Republic of Bulgaria, 1200 access points to the state network of service providers of economic interest should be established as a main objective to ensure gigabit speeds. Of the 1 200 target access points for providers of services of general interest to be connected to the upgraded broadband network, the end-user structure is as follows:

• 55% administrative authorities, including municipalities (official documents related to the status of citizens and their property);

• 25% institutions in the field of security and public safety (police, courts, border control);

- 6% educational institutions (schools, universities, academia, community centres and cultural centres);

• 6% social welfare institutions (labour offices, social assistance);

• 4% health institutions (hospitals, emergency teams, health insurance);

• 4% civil protection institutions (incl. fire departments, disaster relief).

Bridging the digital divide

Main objective of the measure is to support the deployment of VHCNs connecting more sparsely populated, remote and rural areas that already have networks in place to access and/or accommodate mobile operator towers with optical connectivity that would provide the necessary backhaul capacity for 5G mobile connectivity as a more efficient way to provide end-user coverage. This will lead to mitigating the "digital divide" by fostering the construction of Very High-Capacity Networks (VHCNs) in under-served, sparsely populated, and rural locales. The initiative targets areas particularly affected by infrastructural deficits arising from market inadequacies. Special attention will be directed towards regions lacking dependable regional or local optical connectivity essential for data transmission to key nodal points in regional and municipal cities. These nodes are crucial for terminating IP transit services from international providers and for connecting with neutral peering Internet Exchange Points (IXPs), thereby enhancing the overall connectivity framework and enabling inclusive digital access.).

As indicated in the Updated National Broadband Infrastructure Plan for Next Generation Access 'Connected Bulgaria' (Updated Broadband Plan "Connected Bulgaria"), there are many regions that are not connected to FTTH (Fiber to the Home) networks. Achieving the Gigabit Society targets will not be possible without investment in VHCN. The available funds will be directed to the construction of VHCN fibre optic access in areas where no such construction is foreseen in the next 3 years or until the end of the intervention period 2026. Priority will be given to maximising the use of existing infrastructure built up by public and private sector organisations. This approach will allow the investment resource to be spent more effectively and efficiently and allow more financial resources to be available to operators who will buil the connectivity to the end-users through appropriate VHCN technologies. In addition to the deployment of fibre optic networks, the construction of facilities for the deployment of high-speed mobile connectivity in underserved areas will be financed and supported, where this approach can ensure greater impact and greater efficiency and effectiveness of the investments made. Operators may find it significantly more efficient to use already existing physical infrastructure, including that of other utilities, instead of deploying VHCN or associated facilities. This applies in particular to areas where there is no suitable electronic communications network or where the construction of new physical infrastructure may not be economically feasible. In addition, cross-sectoral synergies can significantly reduce the need for civil works related to VHCN deployment. Re-use can also reduce the social and environmental costs associated with these works. The supported operators will be obliged to manage the established networks as neutral infrastructure and make it available to other operators under wholesale physical infrastructure access conditions. Fibre-based backhaul is the best suitable technical solution that can connect the identified eligible BTSs in the target areas and facilitate the provision of performant new mobile services and applications, including those enabled by 5G technology. In this way we will meet the end-users' current and future needs for fast connectivity with certain speed, latency, capacity and reliability.

The assessment of regional mobile network coverage across Bulgaria reveals a nuanced landscape of 4G and nascent 5G penetration, underscoring the diverse stages of digital infrastructure development among the regions. This detailed mapping is crucial for strategizing the enhancement of connectivity that is imperative for the nation's integration into the gigabit society.

The socio-economic analysis shows that the implementation of the activities under the measure will ensure affordable broadband access and related services for more than 350 000 people.

The measure will cover up to 90% of the eligible costs related to the construction of the infrastructure. The final aid amount will be determined as a result of the procedure carried out and may not exceed this aid intensity. This is the maximum aid intensity that participants in the procedure can request. An aid intensity of 90% is appropriate taking into account the specificities of the geographic terrain in the target areas, which may lead to difficulties in infrastructure deployment and may require higher than expected investments and low profitability of the target areas due to low population density (most of the target areas are located in rural and remote parts of the country). Higher costs and lower revenues compared to deployment in more populated areas have an important impact on the economic viability of the investment needed to build the infrastructure.

Costs associated with infrastructure development, such as civil engineering, equipment, and staff, are meticulously categorized to ensure they align with the project's strategic goals. Importantly, the project also sets conditions to prevent the misuse of funds and ensure long-term sustainability.

1.2. Please identify the type of broadband network[9] supported by the aid measure.

☐ deployment of fixed access networks[10]. If so, please specify the type of areas targeted by the aid measure.

☐ White[11] ☐ Grey[12] ☐ Mixed (white and grey)[13] ☐ Black[14]

☐ deployment of mobile access networks[15].

☐ 4G ☐ 5G ☐ other

☒ deployment of backhaul networks[16].

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9 As defined in paragraph 19(a). See also paragraph 19(b).
10 As defined in paragraphs 19(c), 19(d) and 21.
11 As defined in paragraph 100.
12 As defined in paragraph 101.
13 As defined in paragraph 103.
14 As defined in paragraph 107.
15 As defined in paragraphs 19(e) and 22-24.
16 As defined in paragraphs 19(f) and 25.

☒ only backhaul ☐ backhaul linked to the deployment of an access network[17]

1.3. Please explain how the aid measure fits with the national broadband strategy and the Union digital policy and environmental objectives[18].

The notified measure is based on the provisions of the State Aid Act, the Electronic Communications Act, the Electronic Communications Networks and Physical Infrastructure Act (ECNPIA) and, respectively, Regulation No 6 of 13 June 2019 on easements arising in favour of operators of electronic communications networks under the ECNPIA, Regulation No 21 of 10 October 2019 on the content, conditions and procedure for the creation and maintenance of specialised maps and registers for electronic communications networks, facilities and related physical infrastructure, the Regulation on the rules and norms for the design, deployment and dismantling of electronic communications networks and the Regulation on data formats and the conditions and procedure for granting access to information at the Single Information Point. All actions under the measure are in line with Regulation (EU) 2021/241 of the European Parliament and of the Council of 12 February 2021 establishing the Recovery and Resilience Facility (RRF Regulation). In addition, the Bulgarian authorities undertake that the decision taken by the Commission on this notification will be binding upon the implementation of the measure.

The Updated Broadband Plan "Connected Bulgaria" is the main sectoral strategic document outlining national digital connectivity policies and objectives and outlining the steps to provide digital infrastructure for the provision of diverse services. The measures set out in the plan envisage improving access to high-speed internet in less populated regions and developing high-speed mobile internet in the country. The plan focuses on creating an favorable for investments legal framework to enable the deployment of VHCNs ensuring a high quality of fixed and mobile connectivity for all citizens and businesses, which is considered a key enabler for a competitive economy and a modern inclusive digital society, delivering on the strategic objective set out in the Commission Communication on Connectivity for a Competitive Digital Single Market – Towards a European Gigabit Society (also known as the "European Gigabit Society Strategy"): by 2025, all households in Europe will have access to download speeds of at least 100 Mbps, which will be increased to 1 Gbps. Investments in the deployment of 5G mobile networks will be of key importance for the digitalisation of the Bulgarian economy and public services. The measures in Updated Broadband Plan "Connected Bulgaria" are consistent with the EU's 2025 targets and correspond to those set out in the National Development Programme: Bulgaria 2030, as well as being part of the milestones and targets included in the NRRPs, but not aligned with the new European 2030 goals set in the Digital Decade (Gigabit for all European households and 5G for all settlements by 2030). The MTC has initiated a new update of the Plan with the aim of revising the national objectives in line with the European 2030 goals.

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17 See paragraph 75.

18 For example, in Decision (EU) 2022/2481 of the European Parliament and of the Council of 14 December 2022 establishing the Digital Decade Policy Programme 2030 (OJ L 323, 19.12.2022, p. 4). See Broadband Guidelines, paragraphs 2-6, 8, 10 and 171.

National Development Programme BULGARIA 2030

The National Development Programme Bulgaria 2030[19] is a framework strategic document of the highest rank in the national programming documents, which defines the vision and general objectives of development policies in all sectors of government, including their territorial dimensions.

Three strategic objectives have been set – accelerated economic development, demographic boom and reduction of inequalities, for the implementation of which government intentions have been grouped into five development areas (axis) and 13 national priorities have been set. The programme includes detailed strategies on priorities, an indicative financial framework, an ex-ante assessment of the impact on key macroeconomic indicators of the implementation of the planned interventions, as well as a mechanism for monitoring and control of the implementation of the strategy document.

Priority 8 'Digital connectivity' sets as its main sub-priorities: (i) digital networks, including high-speed connectivity and 5G mobile networks, (ii) digital infrastructure, including data centres and cloud infrastructures, and (iii) digital inclusion, including connectivity for social centres and free internet access. Part of the measures set out in the Priority 8 are the activities envisaged under the project 'Large-scale deployment of digital infrastructure on the territory of Bulgaria' of the National Recovery and Resilience Plan (NRRP).

Updated National Broadband Infrastructure Plan for Next Generation Access "Connected Bulgaria"

By Decision No 555 of 6 August 2020 of the Council of Ministers of the Republic of Bulgaria adopted the Updated National Broadband Infrastructure Plan for Next Generation Access 'Connected Bulgaria'[20] (Updated Broadband Plan "Connected Bulgaria"), which outlines the national objectives and priorities and is linked to the objectives at European level until and after 2025.

The updated plan outlines the steps to provide digital infrastructure to deliver a variety of services. The measures envisage improving access to high-speed internet in less populated regions and developing high-speed mobile internet in the country. Investments in the deployment of 5G mobile networks will be key to the digitalisation of the Bulgarian economy and public services. The plan outlines the need for targeted investment in technological development, completion of the necessary infrastructure and guaranteed network and information security.

The main priority areas included in the plan are:

1. Ultra-fast infrastructure – enabling the deployment of very high capacity networks;

2. Broadband infrastructure – accelerated construction of broadband infrastructure, including for the needs of the public administration;

[19] The National Development Programme Bulgaria 2030 - https://www.minfin.bg/en/1394

[20] Updated National Broadband Infrastructure Plan for Next Generation Access "Connected Bulgaria" - https://www.mtc.government.bg/sites/default/files/updated_nga_plan_connected_bulgaria.pdf

3. Efficient use of radio spectrum – enabling new generation networks;

4. Improving coverage in settlements located in peripheral, sparsely populated and rural areas;

5. Promote the use of digital technologies by providing free internet access;

6. Security of networks.

Updated National Strategic Document entitled "Digital Transformation of Bulgaria for 2024-2030"

The updated National Strategic Document entitled "Digital Transformation of Bulgaria for 2024-2030"[21] and its annexes were adopted in April 2024. The documents were developed in implementation of the European Digital Decade Policy Programme 2030. The National Roadmap reflects our country's strategic vision for the digital transformation, sets the level of national goals and contains Bulgaria's priorities for the period up to 2030. As measures in the Roadmap for the implementation of the document are set out activities: (i) Development of the state backbone network by increasing its transmission capacity and ensuring connectivity to all municipal centres and (ii) Improvement of the connectivity of peripheral sparsely populated and rural areas and deployment of very high capacity networks (VHCNs) envisaged under the project "Large-scale deployment of digital infrastructure on the territory of Bulgaria" of the National Recovery and Resilience Plan (NRRP).

The digital transformation of Bulgaria and the policies, activities and measures to implement this process are directly related to the increase in specialization in products and industries characterized by higher technological and research intensity, which will allow our country to occupy better and more prestigious positions in the global rankings.

1.4. Please confirm that all speeds mentioned in this notification are deemed to mean speeds under peak-time conditions[22].

☒ Yes ☐ No

1.5. Please indicate the time horizon[23] of the aid measure and how it has been determined.

The initial version of the NRRP provided for 48 months for the implementation of the activities under the measure if the project started in June 2022 and had to be completed by June 2026.

Due to the dynamic political situation in the country, there were significant delays in some of the NRRP activities and projects.

[21] Updated National Strategic Document entitled "Digital Transformation of Bulgaria for 2024-2030" - https://egov.government.bg/wps/portal/ministry-meu/strategies-policies/digital.transformation/itis-national-strategic-documents/national.strategic.document.digital.transformation

[22] Paragraphs 19(j) and (k). See also paragraph 20, last sentence.

[23] Paragraph 19(m). See also paragraph 80.

Currently, the measure is planned to be implemented in the period 2024-2026 if the activities start in September 2024 and are completed by June 2026, which is a fully realistic deadline for the implementation of the measure.

1.6. Please indicate the investment model through which the aid measure is implemented.

☒ Gap funding[24] ☐ Support in kind[25] ☐ Direct investment[26]

☐ Concessionaire[27] ☐ Other. If so, please provide details……..

2. Facilitation of the development of an economic activity

2.1. Please identify the economic activities that will be facilitated by the aid measure and explain how the development of those activities is supported[28].

In Bulgaria, substantial portions of the population remain unable to connect to high-speed networks, representing a significant barrier to the nation's transition to a gigabit society. This digital divide not only stifles economic and technological growth but also exacerbates rural depopulation across extensive areas. The strategic goal from one side is to invigorate connectivity in under-served rural areas, and from the other side, to ensure universal access to Very High-Capacity Networks (VHCNs) for all Bulgarian citizens.

The digital transition is key to strengthening social and economic resilience, unleashing the potential for economic growth and job creation. The COVID-19 pandemic has accelerated the trends towards digital transformation by affirming the importance of digital infrastructure, online trainings and the digitalisation of small and medium-sized enterprises (SMEs).

The funds available for the implementation of the measure will be directed to the deployment of VHCN in areas where no such infrastructure is foreseen in the next 3 years or until the end of the intervention period 2026. Re-use of existing infrastructure built by public and private sector organisations will be a priority.

This approach will allow the investment resource to be spent more effectively and efficiently and allow more financial resources to be made available to operators building connectivity to end-users through appropriate VHCN technologies. In addition to the deployment of fibre optic networks, the construction of facilities for the deployment of high-speed mobile connectivity in underserved areas will be financed and supported, where this approach can ensure greater impact and greater efficiency and effectiveness of the investments made. Operators may find it significantly more efficient to use already existing physical infrastructure, including that of other utilities, to deploy VHCN or associated facilities. This

[24] Annex IV, paragraph 1.
[25] Annex IV, paragraph 2.
[26] Annex IV, paragraph 3.
[27] Annex IV, paragraph 4.
[28] Paragraphs 35-36.

applies in particular to areas where there is no suitable electronic communications network or where the construction of new physical infrastructure may not be economically feasible. In addition, cross-sectoral synergies can significantly reduce the need for civil works related to VHCN deployment. Re-use can also reduce the social and environmental costs associated with these works. The supported beneficiaries (operators) will be obliged to manage the networks deployed as neutral infrastructure and make it available to other operators under wholesale physical infrastructure access conditions in order to facilitate the provision of retail broadband services to individuals and small and medium-sized enterprises (SMEs), non-profit entities and local public administrations ('end-users').

The target areas are mostly remote and sparsely populated rural areas, which do not have VHCN and have a much higher cost than similar connections in more competitive and populated areas of Bulgaria. The implementation of State aid is necessary to ensure access to broadband services and to enable end-users in these remote, dispersed and sparsely populated target areas to benefit from advanced digital applications such as cloud computing, eGovernment services and eHealth. In addition, efficient broadband services will allow end-users to access remote education and teleworking services, which are of particular importance, effectively contributing to bridging the digital divide to the benefit of end-users in these remote areas.

In order to deploy VHCNs in the targeted areas and ensure connectivity of 1 Gbps, investments in optical fibre networks to remote and sparsely populated areas need to be made in many areas of the country. Without such investments, telecommunications and other network operators would have no market interest in further investments in VHCN in such locations. The intervention will enable end-users in the target areas to have access to VHCN based services that can meet their needs at affordable prices. The measure enhances the economic competitiveness of the target areas, ensures equal opportunities for growth throughout the country and provides an incentive for the development of a modern digital economy.

2.2. Please confirm that the aid measure, the conditions attached to it (including its financing method where that method forms an integral part of the aid) or the activity it finances do not entail any violation of provisions or general principles of Union law[29].

☒ Yes ☐ No. In this case, please provide explanations……..

3. Positive effects of the aid

3.1. Please describe whether and, if so, how the aid measure will bring about positive effects (*e.g.*, in terms of reduction of digital divide[30], correction of social or regional

[29] Paragraph 41.
[30] Paragraphs 19(q) and 50.

inequalities, equity, sustainability goals[31], lower prices and better choice for end-users, higher quality and innovation, completion of the Digital Single Market[32])[33].

Public intervention is based on the existence of market failures in the target areas, both in terms of availability of VHCN and of efficient and affordable retail broadband services. The measure aims to ensure that as many end-users as possible in the target areas have access to high-speed connectivity and better quality broadband services at affordable prices comparable to those in other areas of the country. Increased VHCN indicators will contribute to reducing the digital divide in the targeted areas, thus facilitating end-users' access to advanced digital services (cloud services, distance learning and working, telemedicine, etc.), which have become even more relevant during the COVID-19 pandemic for maintaining an adequate quality of life.

Broadband is recognised as one of the main tools for improving the economic and social well-being of the population. It is becoming an increasingly important factor not only for the competitiveness of enterprises, but also for supporting social inclusion, while expanding opportunities for the development and use of digitally enabled services, including eGovernment services. The spread of high-speed connectivity can lead to a significant increase in gross domestic product (GDP), employment, competitiveness of national economies on the international stage and improve the quality of life.

Digital infrastructure is a prerequisite for unrestricted access to public services, regardless of place and time, as it will create more opportunities for people to overcome economic and social isolation - local businesses will be facilitated and motivated to implement new business strategies and models, develop innovative products and services competitive in regional and international markets, labour mobility will allow the creation of new jobs and the capture of niche markets. Citizens, for their part, will not only have easier access to digital health and social services, but also to online education and vocational training courses, cultural exchanges, etc.

Efforts will be made to strengthen territorial and social cohesion by bridging the gap between the population and the economy in the target areas, taking into account access to affordable broadband and related services.

The measure will incentivise both the construction/upgrading of VHCNs in the affected areas and the provision of the relevant wholesale services, while also indirectly affecting the use of the relevant retail services by end-users. Without the measure, network operators deploy VHCN and providers would not provide the relevant wholesale and retail services at affordable conditions and, in turn, end-users' usage of the relevant retail services would remain limited, whereas in most cases access to such services would not be ensured in the absence of VHCN deployment.

State aid will accelerate the deployment of 5G technologies and networks with the necessary capacity and performance to deliver digital services and applications that can be much more efficient than traditional ones thanks to this technology. Accelerated deployment

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31 Paragraph 172.

32 Paragraph 171.

33 Paragraphs 42-43.

will be achieved by extending the coverage of efficient mobile backhaul networks in areas where it is more cost-effective, especially in rural and strategic areas, helping to bridge the current social, economic, gender and territorial digital divide. 5G offers very high capacity, low latency and density of connections between sites, which will favor the emergence and use of new applications and production models. 5G will open up new opportunities for industrial and social transformation.

A fibre-optic backhaul network is a prerequisite for more efficient and effective mobile services and applications, including those based on 5G technology, to be offered by eligible base stations. The measure is a necessary precondition to ensure that the benefits can also reach rural areas, contribute to their economic development and thus reduce the digital divide.

Support for the deployment of fixed and mobile networks and 5G can facilitate the development of a range of economic activities by increasing connectivity and access to broadband networks and services for citizens, businesses and public administrations. The aid will facilitate the development of economic activities in areas where they are not present or are provided only to an extent that cannot meet the needs of end-users.

The aid will contribute to the development of various economic activities due to its incentive effect. Changes are expected towards the development of economic activities by operators supported by the aid which they would not otherwise carry out in the same period of time or would carry out in a smaller scope or in other areas.

It aims to promote the development of efficient mobile networks that meet current and future end-user demand, including for 5G connectivity in relation to a range of applications and services (e.g. remote monitoring, security, surveillance and safety, smart and connected vehicles, diverse AI devices and systems, remote operations, telemedicine services, etc.).

Largest telecommunication companies in the country provide in case of demonstrated commercial interest from other operators of electronic communications networks, including other business customers, optical fiber through rental under the relevant market conditions. The latter is most often implemented in practice through the conclusion of framework trade agreements under the so-called ‘IRU model’ (Irrevocable Right of Use). The purpose of these contracts is to grant a long-term (in the case of the aid, the BG authorities plan for 20 years) right of use the existing or upgraded network.

The measure will contribute to correcting social or regional inequalities and reducing the digital divide between rural and urban areas in the country. It will enable citizens and businesses in the target areas to reap the benefits of effective digital connectivity by improving access to basic means of communication, facilitating the use of different applications, thereby improving social and territorial cohesion.

The measure shows an incentive effect to further develop the deployment of backhaul networks that support the provision of efficient mobile services to the benefit of consumers, businesses and public administration in the areas of intervention. The measure will change the behavior of potential beneficiaries in such a way that they carry out activities that they would not carry out without the measure or would carry out in a limited or different way or would not carry out in the target areas.

The measure will significantly improve the availability of high-quality backhaul networks, which in turn will facilitate the provision of efficient mobile communications services (including those enabled by 5G technology), which are part of the basic needs of modern society. The planned activities will contribute to correcting social or regional inequalities and reducing the digital divide between rural and urban areas in the country.

The cost of VHCN deployment in the identified areas is significantly higher than the cost of reaching urban densely populated areas due to geographical remoteness and generally unsatisfactory infrastructure. In addition, the base for achievable future revenues of operators will be more limited due to the low population density in these areas and consequently lower incomes. Also, regulatory measures (i.e. regulatory access obligations allowing the re-use of existing infrastructure, regulatory obligations in terms of transparency, non-discrimination and price control, as well as measures aimed at reducing investment costs) would not be sufficient to overcome obstacles to the deployment of VHCNs and services in rural, remote and sparsely populated areas.

Therefore, we consider that without public intervention it does not seem possible to reduce the digital divide between the areas envisaged for intervention and the rest of the territory of Bulgaria.

The intervention will deploy ultra-fast connectivity and VHCN, through optical routes providing 10 Gbps connectivity, to ensure up to 1 Gbps of connectivity to end-users. By providing ultra-fast connectivity of state and public institutions, including educational, cultural and health institutions, prerequisites for the development of the digital economy and governance in these areas are created.

At the same time, the market for ultra-fast wholesale broadband services will be positively affected, giving citizens and businesses in targeted areas more favorable conditions for access to digital services. Strengthening trust in internet connectivity in turn introduces new business models and provides new services to end-users, increases the competitiveness of the local economy, social cohesion in sparsely populated and remote rural areas, increases employment and the standard of living of the population.

4. Market failure as regards fixed access networks

4.1. Please indicate the performance in terms of download speed (and, if applicable, of upload speed and other parameters) that the subsidised networks will have to provide[34].

According to the 2024 Digital Decade Report[35], in the area of digital infrastructure and connectivity, and in particular gigabit connectivity, Bulgaria is one of the forerunners in the EU.

The disparity in broadband access between urban and rural areas, which is prevalent

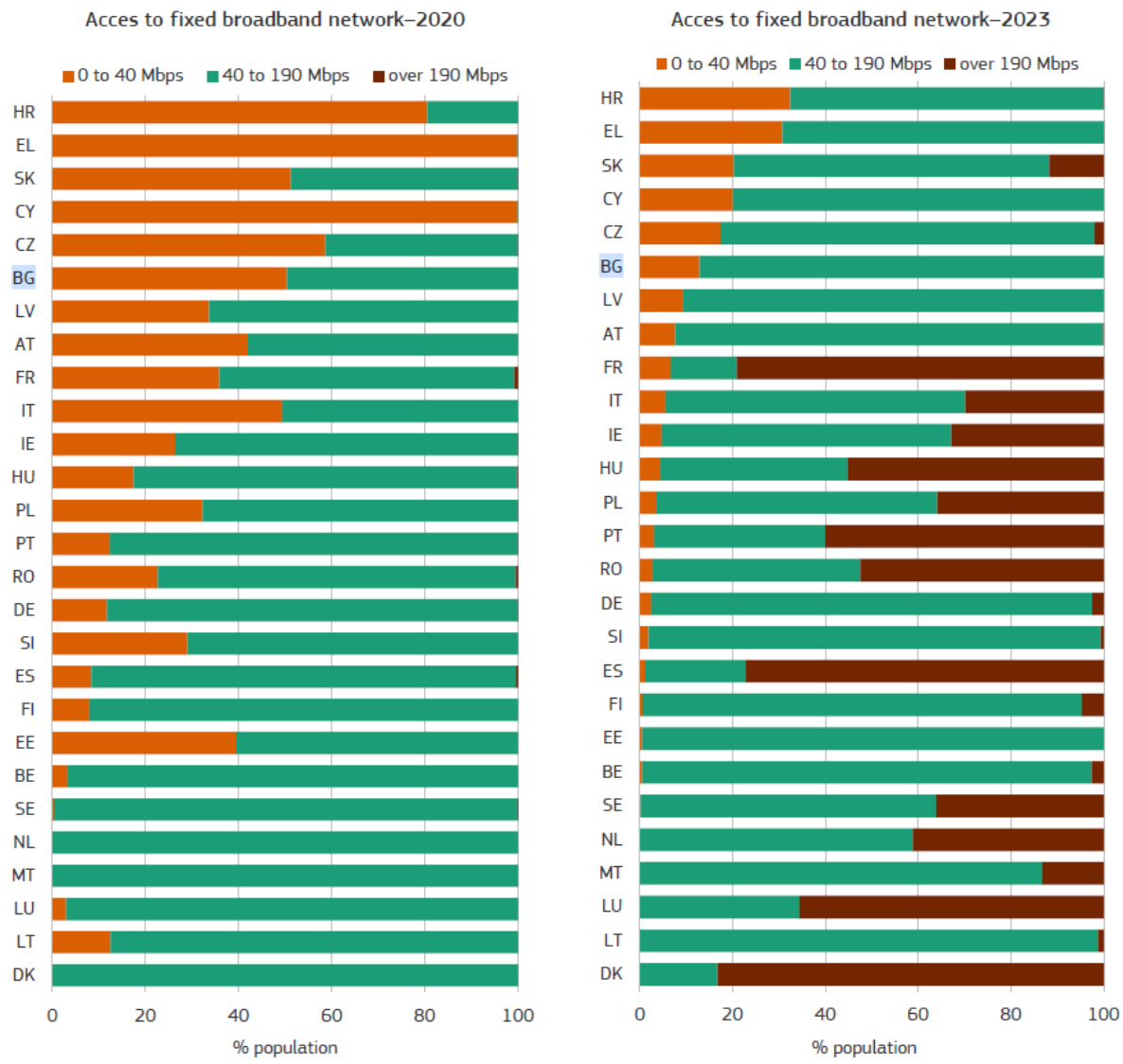
[34] Paragraph 70.

[35] 2024 Digital Decade Report for Bulgaria

across Europe, is influenced by various factors including demographic shifts, employment rates, social status, poverty risk, mobility, access to social services, and economic diversification. Rural and sparsely populated areas, in particular, present economically unviable markets due to limited financial resources and a basic familiarity with digital technology among the population, resulting in a low initial demand for internet services. This socioeconomic backdrop explains the lack of private sector investment in these regions, necessitating state intervention to stimulate both economic growth and technological adoption.

To address these challenges, the deployment of digital infrastructure must be accompanied by initiatives to promote internet benefits, ICT use, and user training. This approach will not only encourage private operators to leverage this infrastructure but will also enhance the competitive offering of retail services. Specific strategies, such as the establishment of broadband connections in state and public institutions in moderately populated areas, the creation of free Wi-Fi zones around public buildings, and the development of local communication nodes linked to national backbone networks, are essential. Additionally, targeted measures to boost digital literacy and promote the use of e-services will stimulate both the supply and demand for broadband-delivered services, thereby bridging the digital divide and fostering a more inclusive digital landscape in Bulgaria.

According the Ninth report on economic, social and territorial cohesion in the rural areas lost population overall, but especially in the southern and eastern EU, with large, mainly rural, parts of Portugal, Spain, Croatia, Bulgaria, Romania and the Baltic countries. In the table below is information about fixed broadband in 2020 and the progress in 2023.



Source: DG REGIO calculations on Batista e Silva, Dijkstra and Sulis, 2024.

Bulgaria brings a positive contribution to the EU's Digital Decade target for Very High-Capacity Networks (VHCN), while demonstrating limited dynamic. 88.6% of the country's households are serviced with VHCN, against an EU average of 78.8%.

Bulgaria brings a very strong contribution to the EU's Digital Decade target for Fibre to the Premises (FTTP). 88.6% of the country's households are serviced with fibre, against an EU average of 64% and increasing by 3 points compared to the previous year.

Within urban areas, there is a widespread availability of such networks provided by alternative operators. The incumbent competes with these networks via the deployment of FTTP technologies. As a result, there is potent infrastructure-based competition. However, in rural and sparsely-populated areas, there is considerably less competition. Even though Bulgaria made considerable efforts, creating incentives for the deployment of new infrastructures as well as providing public funding, fully covering these areas is an extremely difficult task. The situation is further complicated by a low demand from a substantial part of the population, as only 35.5% of the population has at least basic digital skills.

However, further progress is also needed on the availability of mobile networks and

services, including on the basis of 5G, to meet the current and future needs of end-users in line with the country's targets set in the digital part of the NRRP.

4.2. Please indicate end-users' current and future needs capable of being addressed by fixed networks providing the performance mentioned at point 4.1 (and not by the existing fixed networks), submitting verifiable supporting evidence thereof (*e.g.*, consumer surveys, independent studies)[36].

.....

4.3. Mapping exercise[37]. Please provide the following information.

(a) Performance of the existing and planned (in the relevant time horizon) networks that have been mapped (*e.g.*, download speed, upload speed, latency, packet loss, packet error, jitter, service availability, etc.)[38].

- Given the high penetration in ultra-fast broadband networks, it was reflected in the methodology for calculating coverage and identifying eligible areas. For this, the objective geographic unit for characterizing the coverage became the cadastral parcel, separating it from the singular population entity.
- Additionally, a more realistic approximation was made for the calculation of population, using for the data provided by the National Statistics Institute (NSI). As a result of this change, taking into account that the number of dwellings is the denominator in determining the coverage percentage, the coverage ratios referring to cadastral dwellings are, in general, lower than those that would be obtained by applying the dwelling data NSI used in previous years.
- The consideration of maximum demand conditions for the definition of transmission speeds is introduced, which allows more real information on the quality of the broadband service to be given.

The broadband coverage data is presented on a map at **municipal level** and settlement level.

Broadband coverage

Geospatial broadband coverage in Bulgaria, which allows the user to find out about data connection provision by type of technology (fixed/mobile) and transmission speed, at different territorial levels, descending to municipal scale.

Broadband technology

The technology that makes it possible to offer broadband services includes networks of fiber optics to the home (FTTH); the radioelectric ones based on WiMAX; and mobile networks 3.5G (UMTS with HSPA), 4G (LTE) and 5G.

Broadband speed

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36 Paragraph 53 and footnote (48).
37 Paragraph 72.
38 Paragraph 73(a) and footnote (62).

Broadband speed is presented with information on aggregated coverage in Fast Broadband (≥30 Mbps), Ultrafast Broadband (≥100Mbps) and ≥1 Gbps.

The intervention zone is spread throughout the territory of Bulgaria and targets areas where a 'market failure' has been identified. According to the national definition so far adopted in the Rural Development Programme, a rural area is a municipality in which there is no settlement with a population of more than 30 000 people. The Strategic Plan for Agriculture and Rural Development of the Republic of Bulgaria for the period 2023-2027 includes a new national definition from 2022, which defines as 'rural area' the municipalities in which there is no settlement with a population of more than 15 000 people, within the scope of which 215 municipalities fall and account for 81.1% of the total number of Bulgarian municipalities (265). The latest data from the Nation Statistic Institute (NSI) population census show a serious decline of the population in rural areas to 623 130 people.

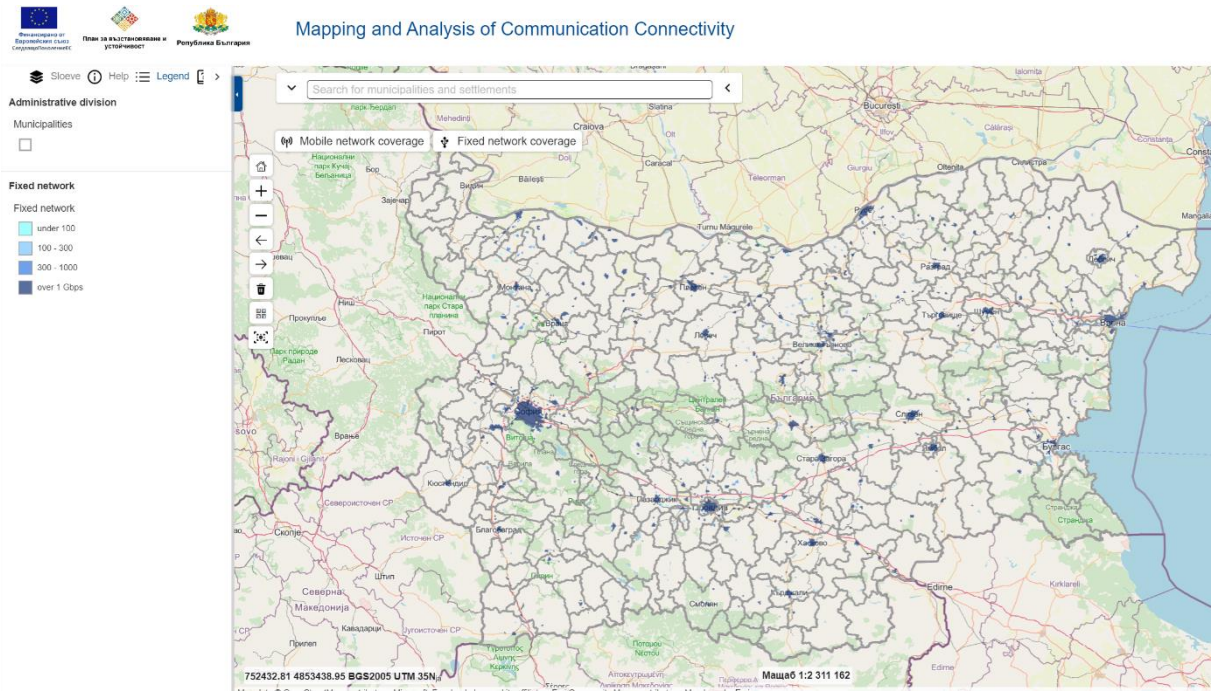
Aid will be provided to support the deployment of very high capacity networks, including 5G connectivity, with a focus on less populated and remote rural areas. Operators report a lack of plans to upgrade or expand networks with a 2026 perspective in settlements, respectively municipalities below 1 Gbps from the list compiled according to the mapping exercise.

A comprehensive mapping of broadband Internet access throughout the country has been conducted in 2023. This survey has generated a current snapshot of both private and public digital infrastructure, alongside service quality, utilizing standard metrics for broadband network mapping. This includes considerations for sectors with specialized needs. The assessment and analysis of communications connectivity and broadband coverage was made with web-based GIS application, integrating data from the Single Information Point (SIP), the Communications Regulatory Commission (CRC), and various telecommunications providers. This approach facilitated the identification of geographic areas slated for enhancement via state aid under the project.

The mapping of mobile networks adhered to the guidelines set forth in the Broadband Guidelines. These guidelines align with the directives from the Body of European Regulators for Electronic Communications (BEREC) regarding geographic surveys and network deployments. Several key factors were meticulously considered during the mapping process:

- Optical Connectivity: Assessment of existing optical connectivity to a termination point within a populated area.
- Network Performance Metrics: Analysis of peak time conditions, packet loss, jitter, latency, and throughput, the latter defined per RFC2544 as the maximum data transfer rate achievable on the network.
- Service Consistency: Evaluation of the uniformity in service quality delivered to end-users and the interaction with other concurrent services.
- Environmental Influences: Consideration of how local environmental conditions might impact signal distribution characteristics such as interference and reflections.

The data was compiled with a precision of 100 meters by 100 meters, ensuring detailed and actionable insights for the subsequent deployment of digital infrastructure. This thorough mapping initiative is fundamental to pinpointing specific areas in need of state intervention, thus fostering a more connected and resilient Bulgaria.



The detailed data from the mapping exercise were presented on the Ministry's website (https://www.mtc.government.bg/bg/category/46/publichna-konsultaciya-otnosno-investicionnite-namereniya-v-oblastta-na-izgrazhdane-i-razvitie-na-mrezhi-s-mnogo-golyam-kapacitet) as well as in the 'Broadband mapping' section of the Single Information Point (https://sipbg.gov.bg/Web/?configUrl=https://sipbg.gov.bg/Web/BaseProject/Configs/config.json).

(b) How future investment plans in the relevant time horizon of the aid measure have been assessed to establish their credibility[39]. *Inter alia*, please indicate:

In order to ensure an incentive effect for the development and facilitation of those economic activities, the measure carried out a public consultation on investment intentions in the field of construction and development of very high capacity networks with electronic communications network operators and service providers, other stakeholders and the general public, organised by the MTC.

(i) The evidence requested to, and submitted by, the relevant stakeholders to demonstrate the credibility of their investment plans[40].

Operators report a lack of plans to upgrade or expand networks with a 2026 perspective in settlements, respectively municipalities below 1 Gbps from the list compiled according to the mapping exercise. During the mapping exercise and the public consultation, operators confirmed that they do not wish to invest in the roll-out of fibre networks to connect eligible base stations by June 2026 due to high deployment costs, which are not balanced by the projected additional revenues. In the absence of public intervention, this situation is likely to last for years, which proves the need to provide public funding in this area. The investments

39 Paragraph 55.
40 Paragraph 85.

will ensure the availability of fibre optic networks for data transmission in the identified areas by the end of the target period, connecting eligible base stations, as well as the achievement of the objectives and investments set out in the NRRPs.

(ii) The assessment criteria applied to assess the credibility of future investment plans[41].

.....

(iii) Whether the stakeholders concerned were invited to sign commitment agreements regarding the implementation of the declared investment plans[42].

☐ Yes ☒ No

If yes, please clarify whether such commitment agreements include milestones and obligations to report progress[43].

.....

(iv) Whether the results of the assessment and the relative justified conclusions were communicated to all stakeholders who submitted information about their private investment plans (and how)[44].

The detailed data from the mapping exercise were presented on the Ministry's website (https://www.mtc.government.bg/bg/category/46/publichna-konsultaciya-otnosno-investicionnite-namereniya-v-oblastta-na-izgrazhdane-i-razvitie-na-mrezhi-s-mnogo-golyam-kapacitet) as well as in the 'Broadband mapping' section of the Single Information Point (https://sipbg.gov.bg/Web/?configUrl=https://sipbg.gov.bg/Web/BaseProject/Configs/config.json).

(c) Start and end date of each step of the mapping exercise.

The first steps to carry out the mapping exercise in the country were taken in 2022 with the preparation of a detailed questionnaire on carrying out a geographical survey for existing fixed and mobile networks. The MTC sent the request to carry out the survey to Communications Regulation Commission (CRC) by letter with number 08-00-113/19.04.2022. The questionnaire was adopted by Decision 138/20.04.2022 of the CRC. All 1008 operators appearing in the Register of providers of public electronic communications networks and services (pursuant to Article 33 of the Electronic Communications Act) were included in the survey. Respondents were asked to provide information on their existing high-speed connectivity (fibre, relay and/or equivalent) in each settlement and what it's capacity is (Mbps,

41 Paragraph 87. See also paragraph 86.
42 Paragraph 88.
43 Paragraphs 88 and 92.
44 Paragraph 91.

spare fibre and/or capacity (Mbps). The questionnaire collected information on planned significant upgrades or expansions of existing networks by 2026.

Based on the responses received, an analysis of the current state of the connectivity and future coverage with horizon December 31 2026 was conducted. According to the 614 responses received from the operators included in the survey, there are 74 municipalities in the country with coverage above 100 Mbps, but it is obvious that the answers obtained were based on theoretical data.

As a second step for the purpose of the project "Large-scale deployment of digital infrastructure in Bulgaria" on 18 July 2022 the Ministry of Transport and Communications, following the need to use validated methodologies for carrying out mapping exercise in the selected geographical areas to be covered by the state aid measure, sent an initiating letter to the Communications Regulation Commission to conduct a targeted survey among telecommunications operators to obtain up-to-date information on the state of mobile coverage in the country, as well as on the planned roll-out of such coverage for the period up to 2026. The questionnaire collected information on the high-speed connectivity to the base stations serving the relevant settlement, the status of installed capacity to the base stations, the subscriber share of the base stations in the relevant area, the maximum instantaneous download speed (download) and the maximum instantaneous upload speed (upload) in the relevant intervals. For the purposes of the study, the 'fibre connectivity' of the relevant operator is assumed if at least one base station in the area is connected to a fibre-optic cable. Relay connectivity is defined as the presence of high-speed relay connectivity, whether point-to-multipoint (PoM) or point-to-point (PoP).

In connection with the request received from MTC, the Communications Regulation Commission has conducting a geographical survey on the current coverage of very high capacity mobile networks on the territory of the country as of 21 July 2022, as well as on the planned deployment of such networks for the period until 31 December 2026. As a result, replies were received from A1 Bulgaria EAD, Bulgarian Telecommunications Company EAD and Cetin Bulgaria EAD and Yettel Bulgaria EAD.

According to the answers submitted by the Bulgarian Telecommunication Company EAD, in 566 settlements they have fiber optic connectivity. In 4 691 settlements there is no high-speed connectivity to the base stations serving the settlement. Data from Bulgarian Telecommunications Company EAD shows that 4 387 settlements have 4G technology and 871 5G. Maximum possible instantaneous download (upload) speed, Mbps - ≥ 10 Mbps < 30 Mbps, from Bulgarian Telecommunications Company EAD is available in 2018 settlements, in 478 locations there is ≥ 2 Mbps < 10 Mbps, in 1 467 a service with speed ≥ 30 Mbps < 100 Mbps is available, in 842 settlements the service speed is between ≥100 Mbps < 300 Mbps, and in 190 it is ≥300 Mbps < 1 Gbps. For 262 settlements Bulgarian Telecommunications Company EAD have not submitted information on the speed of the service offered.

According to A1 Bulgaria EAD, in 5 070 settlements they offer service via 4G technology, and in 179 locations via 5G. According to the answers to the questionnaire provided, the company does not have a fibre network in 3 922 and has such in 1 335. The maximum possible instantaneous download speed (download), Mbps - ≥ 10 Mbps < 30 Mbps,

from A1 Bulgaria EAD is offered in 11 locations, in 6 locations there is ≥ 2 Mbps < 10 Mbps, in 4 612 locations the service is offered with speed ≥ 30 Mbps < 100 Mbps, in 477 locations the service speed is between ≥100 Mbps < 300 Mbps, and in 148 it is ≥300 Mbps < 1 Gbps. In 3 474 settlements A1 Bulgaria EAD does not plan to build new connectivity and in 1 783 settlements they plan to build fibre connectivity.

As of 21.07.2022, in 4 614 settlements Cetin Bulgaria EAD and Yettel Bulgaria EAD have no connectivity, in one settlement they report the presence of relay connectivity, and in 643 they have fiber optic connectivity. Data from Cetin Bulgaria EAD and Yettel Bulgaria EAD shows that 4,359 locations have 4G technology and 733 5G, for 165 locations the company has not indicated data on available technologies. For maximum possible instantaneous download speed (download) from Cetin Bulgaria EAD and Yettel Bulgaria EAD reported in 9 locations offer ≥ 1 Gbps, Mbps - ≥ 10 Mbps < 30 Mbps offered in 116 locations, 4 locations have ≥ 2 Mbps < 10 Mbps, 3 276 offer service at ≥ 30 Mbps < 100 Mbps, 1 093 locations have service speeds between ≥100 Mbps < 300 Mbps, and 594 locations offer speeds of ≥300 Mbps < 1 Gbps. In 4 252 settlements Cetin Bulgaria EAD and Yettel Bulgaria EAD do not plan to build new connectivity and in 840 settlements they plan to build fibre optic connectivity.

For visualization purposes the Bulgarian Ministry of Transport and Communications used a web GIS application for easy and user-friendly entry of broadband availability information and its assignment to the raster cells. Rasters are made up of a matrix of pixels (also called cells), each containing a value that represents the conditions for the area covered by that cell. Raster data is used in a GIS application when we want to display information that is continuous across an area and cannot easily be divided into vector features. Once supplied, data is constantly available and can be edited and updated at any time. The survey was carried out for the following bandwidth categories (bandwidth information always refers to the minimum downstream bandwidth):

Bandwidth	
For mobile network	For fixed network
<100 Mbps	<100 Mbps
<1000 Mbps	<300 Mbps
>1000 Mbps	<1000 Mbps
	>1000 Mbps

When collecting data, the following technologies for networks are distinguished:

Fixed and mobile
FTTH
FTTB
FTTx bitstream
FTTN/C
xDSL
VDSL
LAN, RLAN

CaTV
Fixed Wireless Access (FWA)
Satellite
LTE
3G, 4G, 5G
5G in 3.4-3.8 GHz
other

The methodology used was entirely based on the data structure of the Single Information Point, thus guaranteeing consistency and continuity of the results. The data methodology is part of the REGULATION on the formats of the data and on the terms and conditions for providing access to the information in the Single Information Point, available here: https://sipbg.gov.bg/SIP.Experts/public/eit/law.htm#_Toc542310321. The Regulation went through an extensive public consultation before its adoption by the Council of Ministers.

The basic methodology was published on the site of the Ministry of Transport and Commutations.

(d) Number and identity of contributors to each step of the mapping exercise.

MTC organizes the preparation of detailed mapping of the communication connectivity in the country. A detailed Questionnaire on the possibility of collecting data through the Single Information Point for conducting a geographical survey under Article 181a of the Electronic Communications Act when upgrading the SIP was prepared jointly with the CRC.

The mapping and analysis of the communication connectivity and broadband coverage in the country were carried out using a web GIS application using data from the Single Information Point (SIP), the Communications Regulation Commission (CRC) and the telecommunication operators to determine which geographic areas will be covered by the State aid measure under the project.

The results of the mapping were published on the official website of the MTC, and feedback was received from telecom operators about their connectivity in some of the settlements.

(e) Intermediate results and final results of the mapping exercise.

Regional Coverage Mapping Results

North-West Region:

• Demographics and Geography: Comprises 51 municipalities with a population of 667 763 spanning an area of 19 070 km².

• Network Penetration:

Fixed network area with up to 100 Mbps capacity - 3,13 km²

Fixed network area with 100 - 300 Mbps capacity - 17,89 km²

Fixed network area with 300 - 1000 Mbps capacity - 11,69 km²

Fixed network area with over 1Gbps capacity - 246,54 km²

North Central Region:

• Demographics and Geography: Includes 36 municipalities, hosting a population of 683 347 over 14 974 km².

• Network Penetration:

Fixed network area with up to 100 Mbps capacity - 0 km²

Fixed network area with 100 - 300 Mbps capacity - 95,96 km²

Fixed network area with 300 - 1000 Mbps capacity - 19,04 km²

Fixed network area with over 1Gbps capacity - 236,92 km²

North-East Region:

• Demographics and Geography: Contains 35 municipalities, with a population of 825 009 spread across 14 487 km².

• Network Penetration:

Fixed network area with up to 100 Mbps capacity - 0 km²

Fixed network area with 100 - 300 Mbps capacity – 14,12 km²

Fixed network area with 300 - 1000 Mbps capacity – 7,71 km²

Fixed network area with over 1Gbps capacity – 227,91 km²

South-East Region:

• Demographics and Geography: Encompasses 33 municipalities with a total population of 1 302 828 in an area of 14 645,1 km².

• Network Penetration:

Fixed network area with up to 100 Mbps capacity – 1,87 km²

Fixed network area with 100 - 300 Mbps capacity – 11,75 km²

Fixed network area with 300 - 1000 Mbps capacity – 16,96 km²

Fixed network area with over 1Gbps capacity – 225,15 km²

South-West Region:

• Demographics and Geography: The largest in terms of population, this region includes 52 municipalities with 2 017 861 residents over 20306 km².

• Network Penetration:

Fixed network area with up to 100 Mbps capacity – 2,57 km²

Fixed network area with 100 - 300 Mbps capacity – 10,55 km²

Fixed network area with 300 - 1000 Mbps capacity – 24,99 km²

Fixed network area with over 1Gbps capacity – 426,46 km²

South Central Region:

• Demographics and Geography: Mirroring the Southwestern Region, it comprises 58 municipalities but with a smaller population of 1 302 828 across a larger area of 22 365,1 km².

• Network Penetration:

Fixed network area with up to 100 Mbps capacity – 16,08 km²

Fixed network area with 100 - 300 Mbps capacity – 16,33 km²

Fixed network area with 300 - 1000 Mbps capacity – 30,26 km²

Fixed network area with over 1Gbps capacity – 257,31 km²

As seen from the regional coverage mapping results, the variable degrees of network coverage across Bulgaria's regions highlight significant disparities that need addressing to bridge the digital divide. The gradual rollout of 5G, coupled with the robust presence of high-speed 4G, sets a foundation, but accelerated efforts are essential to equip all regions with high-capacity networks that support Bulgaria's aspirations for a fully connected and digitally inclusive society.

Conclusions from the Regional Coverage Mapping Results

The advancement and deployment of 5G networks in Bulgaria, especially in rural areas, is crucial for achieving comprehensive digital inclusion. This technology promises to revolutionize internet connectivity by providing higher speeds, lower latency, and more reliable service compared to 4G. However, the effectiveness of 5G is heavily dependent on the underlying infrastructure, particularly fiber-optic backhaul, which is necessary to handle the increased data loads.

The transition to 5G supported by robust fiber-optic backhaul is essential for fostering sustainable economic growth and digital inclusion across Bulgaria. Each region requires a tailored approach that considers its demographic, economic, and geographic particulars. Strategic investment in fiber infrastructure, coupled with regulatory support and community involvement, will be crucial in ensuring that rural and semi-urban areas are not left behind in the digital era.

(f) Confirmation that the mapping exercise has been carried out[45]:

☐ for fixed wired networks, at address level on the basis of premises passed[46].

[45] Paragraph 73(b).

[46] For a definition of premises passed, see paragraph 19(l).

☒ for fixed wireless networks, at address level on the basis of premises passed or on the basis of a maximum 100 x 100 metre (or smaller) grids. Please specify which of the two criteria was applied.

The mapping takes into account the following factors:

• availability of optical connectivity to a termination point in a populated area;

• normal peak weather conditions;

• taking into account the qualities of a service with the highest achievable data speed currently provided on the network;

• other services provided to the same end-user of the same quality;

• limitations to the quality of service to the end-user caused by the parameters of the customer's room or mobile equipment, which should not be taken into account;

• whether the environmental conditions in the locality affect the characteristics of the signal propagation, disturbances, reflections, etc.;

The database has been prepared with a resolution level of 100 m x 100 m.

(g) Confirmation that the mapping exercise also mapped existing networks that could be upgraded with marginal investments (such as an upgrade of the active components) to provide 1 Gbps download and 150 Mbps upload speeds and that such areas have been carved out from the intervention area[47].

☒ Yes

☐ No

(h) Whether your authorities complied with the best practices for applying the mapping methodologies described in Annex I of the Broadband Guidelines[48].

☒ Yes

☐ No. In this case, please specify in which respects your authorities deviated from Annex I of the Broadband Guidelines and for what reason.

(i) Confirmation that the methodology and the underlying technical criteria for mapping have been made publicly available (and how)[49].

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47 Paragraphs 56-57.

48 Paragraph 74.

49 Paragraph 76.

For the purposes of measure "Large-scale deployment of digital infrastructure on the territory of Bulgaria" in the area of Digital connectivity of Pillar 3: Linked Bulgaria from the National Recovery and Resilience Plan (NRRP), a mapping exercise was carried out on the provision of broadband internet access across the country.

The collected data is an up-to-date mapping of the existing private and public infrastructure and the quality of service using standard indicators for the "mapping" of broadband networks, including for the needs of sectors with specific needs. The mapping and analysis of the communication connectivity and broadband coverage in the country was carried out using a web GIS application using data from the Single Information Point (SIP), the Communications Regulation Commission (CRC) and the telecommunication operators to determine which geographic areas will be covered by the State aid measure under the project.

The above information is available in the "Broadband mapping" section of the SINGLE INFORMATION POINT at:
https://sipbg.gov.bg/Web/?configUrl=https://sipbg.gov.bg/Web/BaseProject/Configs/config.json.

Mapping for mobile and fixed networks shall be carried out in accordance with the detailed guidelines on broadband infrastructure funding as part of the Broadband Guidelines which explicitly refer to the Body of European Regulators for Electronic Communications (BEREC) Guidelines for Geographical Surveys and Network Deployment.

After analysis of the mapping, it can be concluded that a population of 1 653 805 people live in municipalities without fixed networks with 1 Gbps and 1 613 235 people live in municipalities without mobile networks with 1 Gbps.

4.4. If the aid measure targets areas in which at least two independent networks providing at least 100 Mbps download speed under peak time conditions are present or credibly planned[50], please clarify if:

(a) None of the existing or credibly planned networks provide a download speed of at least 300 Mbps under peak-time conditions[51].

☒ Yes ☐ No

(b) At least one of the existing or credibly planned networks provides a download speed of at least 300 Mbps under peak-time conditions but does not provide a download speed of at least 500 Mbps under peak-time conditions[52].

☐ Yes ☒ No

If yes, please clarify why your authorities are of the view that no networks will evolve towards providing the same download speed (and, if appropriate, the

50 Paragraph 58.
51 Paragraph 59(a).
52 Paragraph 59(b).

same additional features) of the networks subsidised under the aid measure and, therefore, State intervention is needed to address a market failure[53].

.....

(c) At least one of the existing or credibly planned networks provides a download speed of at least 500 Mbps[54].

☐ Yes ☒ No

4.5. Public consultation. Please provide the following information:

(a) Start and end date of each public consultation carried-out[55].

In pursuance of its duties as the Broadband Competence Office (BCO), the Ministry of Transport and Communications organized a public consultation on investment intentions in areas falling within territories without very high capacity networks allowing speeds of 1 Gbps, which was launched on 20 February 2024 for a period of one month until 19 March 2024.

(b) Content of each public consultation[56].

The data has been compiled to an accuracy of 100 meters by 100 meters, providing detailed and executable information for the subsequent deployment of digital infrastructure. This in-depth mapping initiative is essential to identify specific areas in need of state intervention, thereby promoting a more connected and sustainable Bulgaria. The consultation asked stakeholders about:

- Availability of free optical fibres and/or capacity (Mbps);

-Availability of free fibres, by which standard, whether they are rented and at what price;

-Presence of intentions to deploy VHCNs with a 2026 perspective;

- Supported VHCN access interfaces (speeds, interface type);

- Existence of a planned major upgrade or expansion of networks with a 2026 perspective, up to a download speed of at least 100 Mbps for natural persons and 300 Mbps for legal persons in the locality;

- Determination of the scope (number of households) of the envisaged deployment of very high capacity networks in the locality concerned;

- What quality of service to end-user is achievable in the relevant network based on fibre to the multi-residential building (in the case of fixed networks)/base station (in the case of mobile networks).

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53 Paragraph 59(b).
54 Paragraph 59(c).
55 Paragraph 82.
56 Paragraphs78, 79 and 81. See also footnote (64).

(c) Publicly accessible Internet site (at regional and national level) where the consultation was published[57].

The consultation was published on the official website of the Ministry of Transport and Communications (https://www.mtc.government.bg/bg/category/46/publichna-konsultaciya-otnosno-investicionnite-namereniya-v-oblastta-na-izgrazhdane-i-razvitie-na-mrezhi-s-mnogo-golyam-kapacitet) and in the 'News' section of the Single Information Point (https://sipbg.gov.bg/).

(d) A recap of the main observations submitted by contributors in each public consultation, specifying how they were addressed.

Within this deadline, feedback was received on investment intentions in the field of construction and development of very high capacity networks from three telecom operators who expressed a high interest in the measure.

The responses largely correspond to the requirements in terms of reliability, quality, availability, assessment of operator plans and coverage presented on the mapping maps performed. All relevant comments have been taken into account in further planning of the intervention in order to minimise distortions of competition.

The summary analysis of the consultation carried out showed that, to date, operators are reporting available free fibres in certain directions and will provide information on specific routes if necessary. The fibres are granted as an irrevocable right of use for a period of 20 years.

Operators indicate that they have no investment intentions to deploy VHCNs in settlements or municipalities below 1 Gbps by 2026 from the list compiled from the mapping exercise.

Information was obtained about the investment intentions of one of the operators in the following directions:

- For a fixed network, modernisation of a network in cities where more than one technology is present.

- Interurban routes – data received on planned interurban routes.

For intercity routes and deviations from the national optical network of the operator does not have the necessary documents for the legal construction of a network.

Operators do not have a planned upgrade or expansion of networks below 1 Gbps with a 2026 perspective in settlements or municipalities below 1 Gbps from the mapping list. In the case of a fixed network up to an end-user, a service of up to 1 Gbps may be provided.

Another operator also provides capacity on a commercial basis through the conclusion of various contracts. Payment by customers for the services used is made on a monthly basis, and

[57] Paragraph 78.

the contracts themselves have different duration depending on the needs of the particular customer wholesale, respectively retail, incl. business customers of the company. In case of interest from other electronic communications network operators, Optical fibre is leased under the relevant market conditions.

The deployment of very high capacity networks (VHCNs) shall be planned and carried out in accordance with the long-term strategy of the operator concerned. The investments are financed exclusively from own resources, but the Bulgarian operators also participate in the EC initiatives under the Connecting Europe Facility (CEF 2).

In addition, the competent administrations in the country constantly maintain an 'open door policy' beyond the specific consultation, by organizing regular meetings and open discussions with operators in the country. The Bulgarian continues to monitor the investment plans of the operators.

4.6. Please indicate the final scope of the aid measure in terms of the size of the intervention area and its population density.

Operators' deployment plans for very high capacity networks do not include additional estimates of the number of households to be covered by that deployment, but are based on population figures according to official statistics published by the National Statistical Institute (NSI).

The scope of the intervention was extended in connection with the latest data from the NSI population census, which show a serious decline of the population in rural areas to 623 130 people. With a detailed analysis based on national specifics, such as that in the country there are 2003 settlements with up to 100 inhabitants, with the initially set criteria, the settlements subject to intervention would have a population of 384 000 people at present. Given the dynamics of demographic processes, this may jeopardise the achievement of the objectives as a whole by 2026. In this regard, the scope of the intervention has been extended and it will be carried out in strict compliance with the Broadband State Aid Guidelines, i.e. it will target areas with so-called market failure.

Through the implementation of the actions under the measure, efforts will be made to strengthen territorial and social cohesion by bridging the gap between the population and the economy in the target areas, ensuring affordable broadband access and related services for more than 350 000 people.

5. Market failure as regards mobile access networks

5.1. Please indicate the performance in terms of download speed (and, if applicable, of upload speed and other parameters) that the subsidised networks will have to provide[58].

[58] Paragraph 70.

Active deployment of mobile 5G networks has started and coverage increased to 67% in 2022. In conclusion, the EC recommends Bulgaria to accelerate its efforts regarding connectivity infrastructure, in particular by taking measures to incentivise the use of gigabit connectivity and accelerate the deployment of 5G.

Bulgaria has the opportunity to improve its performance to contribute to the EU's 5G coverage target for the Digital Decade and has shown limited momentum. 70.9% of the country's populated areas are covered by 5G, which remains below the EU average of 89.3%.

Bulgaria has scope to improve its performance to contribute to the EU's 5G coverage Digital Decade target and is demonstrating limited dynamic. 70.9% of the country's populated areas are covered with 5G, which remains below the EU average of 89.3%.

The country boasts a good performance on mobile broadband speeds. According to the Speedtest Global Index, Bulgaria's 5G performance surpasses that of the major European economies, including Germany, France, Spain, and Italy. The OOkla report from 2023 highlights that all three Bulgarian mobile operators Vivacom, A1, and Yettel rank within the top 8 European providers in terms of speed. Notably, Bulgaria secures the 5th position in Europe concerning 5G availability, which considers factors such as 5G coverage, tariff structures, and the adoption of capable devices.

5.2. Please indicate end-users' current and future needs capable of being addressed by mobile networks providing the performance mentioned at point 5.1 (and not by the existing mobile networks), submitting verifiable supporting evidence thereof (*e.g.*, consumer surveys, independent surveys)[59].

.....

5.3. Please confirm that the aid measure cannot be used for the fulfilment of any legal obligations (*e.g.*, obligations linked to the rights to use spectrum)[60].

In order to ensure the effective and efficient use of radio spectrum, the achievement of wireless broadband coverage on the territory of the country and the provision of high-quality and fast connectivity to the population, Decree No 54 of 27 March 2020 of the Council of Ministers reduced fees for harmonised radio spectrum and set an extension of the duration of authorisations for use for at least 15 years, with the possibility of an extension of 20 years.

Spectrum in the 26 GHz frequency band has also been allocated on the basis of criteria ensuring transparency and promoting competition in networks and essential services and ensuring its efficient use. The undertakings undertake to establish and put into operation a terrestrial network on the territory of the country by: within 2 years from the date of entry into force of the authorisation, to start the provision of broadband wireless services by establishing at least 15 base stations; Up to 5 years - to build at least 50 base stations throughout the country; Up to 8 years - to build at least 250 base stations throughout the country.

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59 Paragraphs60, 61 and 64.

60 Paragraph 65.

The assignment of available spectrum in the 700 MHz and 800 MHz bands was also completed by Council of Ministers Decision No 699 of 4 October 2023. Actions were approved to enable the use of radio spectrum in the 700 MHz and 800 MHz bands for civil purposes and to establish organizational measures to ensure the safety of the flights of the Air Force of the Republic of Bulgaria. Pursuant to the Decision, the Communications Regulation Commission conducted a procedure for the assignment of radio spectrum in the 700 MHz and 800 MHz bands and issued 6 licences for the right to use a total of 2x30 MHz in the 700 MHz and 2x30 MHz bands in the 800 MHz band to the three terrestrial mobile operators allowing the provision of electronic communications services with national coverage for a period of 15 (fifteen) years.

In view of the above, it is ensured that the aid measure will not be used to fulfil legal obligations related to rights of use for radio spectrum.

5.4. Please indicate whether the aid measure targets areas where there is already at least one existing or credibly planned mobile network[61] capable of addressing identified end-users' needs.

☐ Yes ☒ No

If yes, please demonstrate (with the support of verifiable evidence): (a) why such network is considered insufficient to provide end-users with sufficient quality of services to satisfy their evolving needs; and (b) if and how the aid measure will provide such quality of services, thus bringing about a material improvement that the market cannot deliver[62].

5.5. Mapping exercise[63]. Please provide the following information:

(a) The type (e.g. 3G, 4G, 5G, 6G, others) of networks and their number available in the intervention area

The assessment of regional mobile network coverage across Bulgaria reveals a nuanced landscape of 4G and nascent 5G penetration, underscoring the diverse stages of digital infrastructure development among the regions. This detailed mapping is crucial for strategizing the enhancement of connectivity that is imperative for the nation's integration into the gigabit society. Below is an analysis of the mobile network penetration in each region, reflecting their current capacities and highlighting the disparities in digital access:

North-West Region:

• Network Penetration:

Mobile network area with 4G capacity - 10 - 100 Mbps – 703,23 km²

61 Paragraph 62.
62 Paragraph 63. See also paragraph 66.
63 Paragraph 72.

Mobile network area with 4G capacity - 100 - 1000 Mbps – 11 552,19 km²

Mobile network area with 5 G - over 1Gbps capacity – 436,56 km²

o4G coverage with speeds between 10 - 100 Mbps affects only 8% of the area, while the higher speed bracket of 100 - 1,000 Mbps covers 90%.

o5G technology, offering speeds over 1 Gbps, is emerging modestly at 2%.

North Central Region:

• Network Penetration:

Mobile network area with 4G capacity - 10 - 100 Mbps – 555,14 km²

Mobile network area with 4G capacity - 100 - 1000 Mbps – 10 298,25 km²

Mobile network area with 5 G - over 1Gbps capacity – 448,20 km²

o4G services at the lower speed tier cover 6% of the region, whereas the higher tier covers 91%.

o5G coverage is slightly better than in the Northwestern Region at 3%.

North-East Region:

• Network Penetration:

Mobile network area with 4G capacity - 10 - 100 Mbps – 623,07 km²

Mobile network area with 4G capacity - 100 - 1000 Mbps – 9 844,78 km²

Mobile network area with 5 G - over 1Gbps capacity – 670,27 km²

oThe region enjoys a 7% coverage for 4G at 10 - 100 Mbps and 88% for 100 - 1,000 Mbps.

o5G accessibility is at 5%, indicating a gradual adoption of advanced network technology.

South-East Region:

• Network Penetration:

Mobile network area with 4G capacity - 10 - 100 Mbps – 1 753,67 km²

Mobile network area with 4G capacity - 100 - 1000 Mbps – 15 090,49 km²

Mobile network area with 5 G - over 1Gbps capacity – 852,76 km²

o4G coverage stands at 11% for speeds of 10 - 100 Mbps and 85% for speeds of 100 - 1,000 Mbps.

o There is a 4% penetration of 5G, reflecting slow but steady progress in infrastructure development.

South-West Region:

• Network Penetration:

Mobile network area with 4G capacity - 10 - 100 Mbps – 2 279,56 km²

Mobile network area with 4G capacity - 100 - 1000 Mbps – 10 678,39 km²

Mobile network area with 5 G - over 1Gbps capacity – 904,32 km²

o It has the highest coverage of lower-tier 4G at 18%, but lower high-speed 4G coverage at 77%.

o 5G technology is available to 4% of the area, paralleling the national push towards enhancing high-speed connectivity.

South Central Region:

• Network Penetration:

Mobile network area with 4G capacity - 10 - 100 Mbps – 2 131,73 km²

Mobile network area with 4G capacity - 100 - 1000 Mbps – 13 601,82 km²

Mobile network area with 5 G - over 1Gbps capacity – 859,35 km²

o Coverage for 4G (10 - 100 Mbps) is at 16%, and for 100 - 1,000 Mbps at 81%.

o The region matches the national average with a 4% coverage of 5G networks.

As seen from the regional coverage mapping results, the variable degrees of network coverage across Bulgaria's regions highlight significant disparities that need addressing to bridge the digital divide. The gradual rollout of 5G, coupled with the robust presence of high-speed 4G, sets a foundation, but accelerated efforts are essential to equip all regions with high-capacity networks that support Bulgaria’s aspirations for a fully connected and digitally inclusive society.

(b) Performance criteria of the existing and planned (in the relevant time horizon) networks that have been mapped (*e.g.*, download speed, upload speed, latency, packet loss, packet error, jitter, service availability, etc.)[64].

The mapping takes into account the following factors:

- availability of optical connectivity to a base station;
- normal peak weather conditions;

[64] Paragraph 73(a) and footnote (62).

- packet loss; jitter; latency; throughput as defined in RFC2544;
- taking into account the qualities of a service with the highest achievable data speed currently provided on the network;
- other services provided to the same end-user of the same quality;
- limitations to the quality of service to the end-user caused by the parameters of the customer's room or mobile equipment, which should not be taken into account;
- whether the environmental conditions in the locality affect the characteristics of the signal propagation, disturbances, reflections, etc.;
- the fibre-to-base station part of the mobile network, the highest aggregated spectrum (e.g. 60 MHz) and the highest number of parallel MIMO data flows (e.g. 4x4 MIMO) are considered.

The database has been prepared with a resolution level of 100 m x 100 m.

(c) How future investment plans in the relevant time horizon of the aid measure have been assessed to establish their credibility. *Inter alia*, please indicate:

A public consultation has been carried out on investment intentions in the field of building and developing very high capacity networks.

(i) The evidence requested to, and submitted by, the relevant stakeholders to demonstrate the credibility of their investment plans[65].

Operators report a lack of plans to upgrade or expand networks with a 2026 perspective in settlements, respectively municipalities below 1 Gbps from the list compiled according to the mapping exercise. During the mapping exercise and the public consultation, operators confirmed that they do not wish to invest in the roll-out of fibre networks to connect eligible base stations by June 2026 due to high deployment costs, which are not balanced by the projected additional revenues. In the absence of public intervention, this situation is likely to last for years, which proves the need to provide public funding in this area. The investments will ensure the availability of fibre optic networks for data transmission in the identified areas by the end of the target period, connecting eligible base stations, as well as the achievement of the objectives and investments set out in the NRRPs.

(ii) The assessment criteria applied to assess the credibility of future investment plans[66].

.....

[65] Paragraph 85.
[66] Paragraph 87. See also paragraph 86.

(iii) Whether the stakeholders concerned were invited to sign commitment agreements regarding the implementation of the declared investment plans[67].

☐ Yes ☒ No

If yes, please clarify whether such commitment agreements include milestones and obligations to report progress[68].

(iv) Whether the results of the assessment and the relative justified conclusions were communicated to all stakeholders who submitted information about their private investment plans, and how[69].

The detailed data from the mapping exercise were presented on the Ministry's website (https://www.mtc.government.bg/bg/category/46/publichna-konsultaciya-otnosno-investicionnite-namereniya-v-oblastta-na-izgrazhdane-i-razvitie-na-mrezhi-s-mnogo-golyam-kapacitet) as well as in the 'Broadband access' section of the Single Information Point (https://sipbg.gov.bg/Web/?configUrl=https://sipbg.gov.bg/Web/BaseProject/Configs/config.json.

(d) Start and end date of each step of the mapping exercise.

In order to carry out the mapping and coverage analysis for the needs of measure 'Large-scale deployment of digital infrastructure on the territory of Bulgaria', on 6 October 2023 the MTC concluded a contract for the purchase of a mapping tool to determine the existence of a market failure. The tool is a finished product Web GIS application for mapping and analysis of communication connectivity, meeting certain minimum requirements. The purchased product allowed to gather in one place and visualize the information available at the Single Information Point, as well as that submitted by the network operators for the coverage of the mobile and fixed network, as well as the current speeds. In order to use the information collected for State aid purposes, a 90-day contract was concluded on 15 December 2023 with an expert with expertise in cartography and GIS, who processed and analysed the available data according to the Methodology to the Broadband Financing Guidelines set out by the EC, part of the Broadband Guidelines.

(e) Number and identity of contributors to each step of the mapping exercise.

The MTC organized the preparation of detailed mapping of the communication connectivity in the country. A detailed Questionnaire on the possibility of collecting data through the Single Information Point for conducting a geographical survey under Article 181a of the Electronic Communications Act when upgrading the SIP was prepared jointly with the CRC.

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67 Paragraph 88.
68 Paragraphs88 and 92.
69 Paragraph 91.

MTC Web GIS application as a mapping tool to determine the existence performant broadband newtworks. The georeferenced information allowed to gather in one place and visualize the data available in the Single Information Point, as well as that submitted by the network operators for the coverage of the mobile and fixed network, as well as the current speeds. The data was processed and analyzed according to the Methodology to the Guidelines for broadband infrastructure financing, part of the Broadband Guidelines and relevant maps of mobile and fixed network coverage in the country were prepared.

The mapping and analysis of the communication connectivity and broadband coverage in the country were carried out using a web GIS application using data from the Single Information Point (SIP), the Communications Regulation Commission (CRC) and the telecommunication operators to determine which geographic areas will be covered by the State aid measure under the project.

The results of the mapping were published on the official website of the MTC, and feedback was received from telecom operators about their connectivity in some of the settlements.

(f) Intermediate results and final results of the mapping exercise.

Conclusions from the Regional Coverage Mapping Results

The advancement and deployment of 5G networks in Bulgaria, especially in rural areas, is crucial for achieving comprehensive digital inclusion. This technology promises to revolutionize internet connectivity by providing higher speeds, lower latency, and more reliable service compared to 4G. However, the effectiveness of 5G is heavily dependent on the underlying infrastructure, particularly fiber-optic backhaul, which is necessary to handle the increased data loads.

To deliver a comprehensive analysis of the need for strengthening 5G deployment through fiber-optic backhaul for digital inclusion in each Bulgarian region, we need to assess both the current state of connectivity and specific regional characteristics. This approach ensures tailored solutions that address local needs effectively:

North-West Region:

• Digital Infrastructure: Currently, this region has the lowest 5G coverage at 2%, despite having 90% 4G coverage at higher speeds. The stark disparity indicates a significant lag in transitioning to more advanced technologies.

• Challenges: The area's large geographic span and relatively sparse population complicate the economic feasibility of traditional wired solutions.

• Opportunities: Implementing fiber-optic backhaul would drastically increase capacity and reliability, enabling more efficient 5G deployment, which is crucial for supporting rural businesses and remote education.

North Central Region:

• Current State: Slightly better 5G coverage at 3%, with robust high-speed 4G infrastructure.

• Geographic Benefits: The relatively smaller area makes this region potentially more manageable for comprehensive fiber-optic deployment.

• Development Focus: Strengthening the fiber-optic backhaul here could serve as a pilot area for demonstrating the benefits of 5G in rural settings.

North-East Region:

• Technology Adoption: Better 5G penetration at 5%, reflecting early adoption in more densely populated areas or strategic locations.

• Economic Impact: Higher population density correlates with potential economic activities that would benefit from improved connectivity.

• Strategic Importance: Enhancing fiber-optic backhaul is critical not just for residential access but also for supporting emerging industries and tourism.

South-East Region:

• Coverage Analysis: 11% coverage at lower 4G speeds and 4% at 5G indicates a gap in high-speed internet availability.

• Population Considerations: As the population approaches one million, there's a substantial need for scalable and reliable internet services.

• Long-Term Planning: Focus on integrating fiber-optic backhaul into all new infrastructure projects to future-proof the network.

South-West Region:

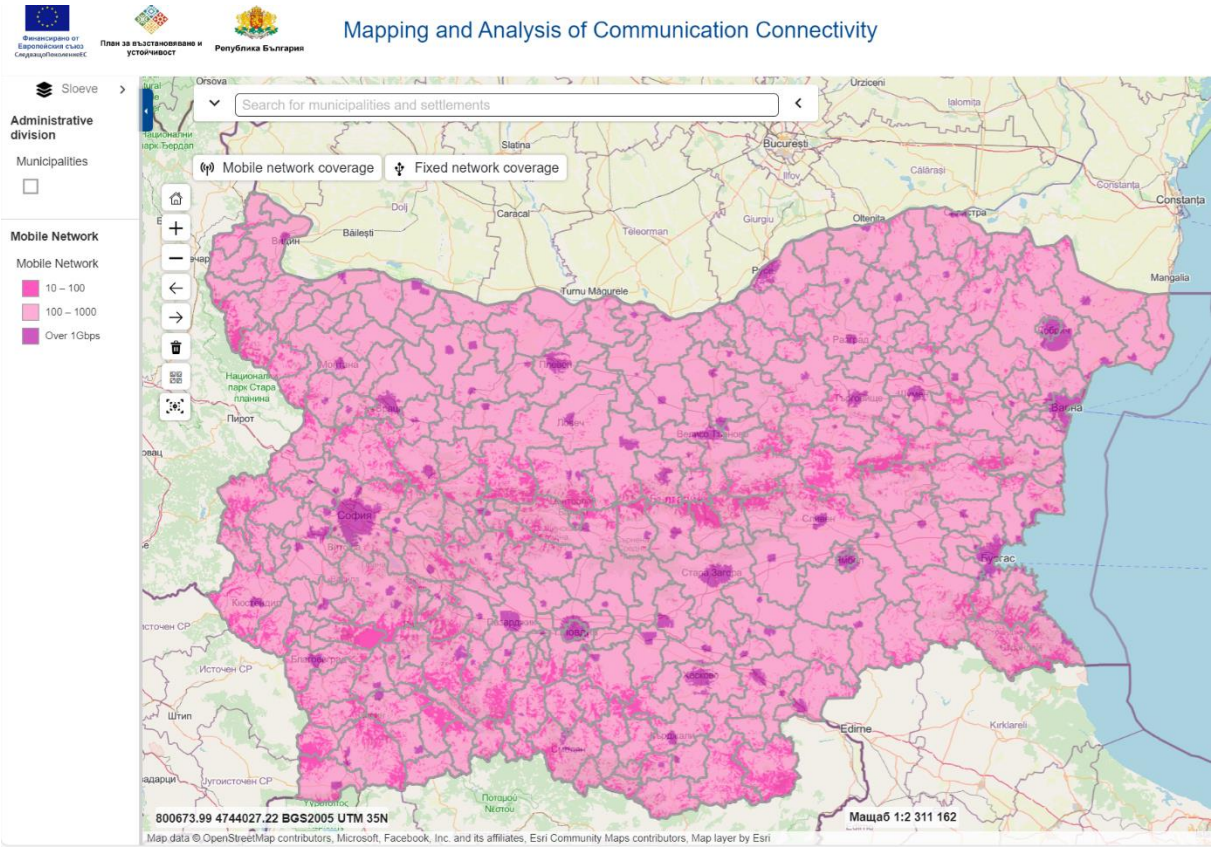
• Connectivity Needs: Although 77% of the area is covered by high-speed 4G, the 4% 5G coverage needs urgent expansion given the region's economic role and population density.

• Urban Influence: Proximity to major urban centers suggests a high demand for data services, making robust backhaul essential.

South Central Region:

• Rural Focus: Given its vast area and diverse topography, the need for reliable internet is critical for ensuring equitable access to services.

• Infrastructure Gaps: The current 4% 5G coverage is insufficient to meet the needs of its over 1.3 million residents, particularly in remote areas.



The transition to 5G supported by robust fiber-optic backhaul is essential for fostering sustainable economic growth and digital inclusion across Bulgaria. Each region requires a tailored approach that considers its demographic, economic, and geographic particulars. Strategic investment in fiber infrastructure, coupled with regulatory support and community involvement, will be crucial in ensuring that rural and semi-urban areas are not left behind in the digital era.

(g) Confirmation that the mapping exercise has been carried out at address level on the basis of premises passed or on the basis of a maximum 100 x 100 metre (or smaller) grids[70]. Please specify which of the two criteria was applied.

The data was compiled with a precision of 100 meters by 100 meters, ensuring detailed and actionable insights for the subsequent deployment of digital infrastructure. This thorough mapping initiative is fundamental to pinpointing specific areas in need of state intervention, thus fostering a more connected and resilient Bulgaria.

(h) Whether your authorities complied with the best practices for applying the mapping methodologies described in Annex I of the Broadband Guidelines[71].

70 Paragraph 73(b). See also footnote (63).

71 Paragraph 74.

☒ Yes

☐ No. In this case, please specify in which respects the your authorities deviated from Annex I of the Broadband Guidelines and for what reason.

(i) Confirmation that the methodology and the underlying technical criteria for mapping have been made publicly available (and how)[72].

For the purposes of measure "Large-scale deployment of digital infrastructure on the territory of Bulgaria" in the area of Digital connectivity of Pillar 3: Linked Bulgaria from the National Recovery and Resilience Plan (NRRP), a mapping exercise was carried out on the provision of broadband internet access across the country.

The collected data is an up-to-date mapping of the existing private and public infrastructure and the quality of service using standard indicators for the "mapping" of broadband networks, including for the needs of sectors with specific needs. The mapping and analysis of the communication connectivity and broadband coverage in the country was carried out using a web GIS application using data from the Single Information Point (SIP), the Communications Regulation Commission (CRC) and the telecommunication operators to determine which geographic areas will be covered by the State aid measure under the project.

The above information is available in the "Broadband mapping (BB mapping)" section of the SINGLE INFORMATION POINT at: https://sipbg.gov.bg/Web/?configUrl=https://sipbg.gov.bg/Web/BaseProject/Configs/config.json .

Mapping for mobile and fixed networks shall be carried out in accordance with the detailed guidelines on broadband infrastructure funding as part of the Broadband Guidelines, which explicitly refer to the Body of European Regulators for Electronic Communications (BEREC) Guidelines for Geographical Surveys and Network Deployment.

5.6. Public consultation. Please provide the following information:

(a) Start and end date of each public consultation carried-out[73].

In pursuance of its duties as the Broadband Competence Office (BCO), the Ministry of Transport and Communications organised a public consultation on investment intentions in areas falling within territories without very high capacity networks allowing speeds of 1 Gbps, which was launched on 20 February 2024 for a period of one month until 19 March 2024.

(b) Content of each public consultation[74].

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72 Paragraph 76.

73 In this regard, see paragraph 82 andfootnote (66).

74 Paragraphs78, 79 and 81. See also footnotes (64).

The data has been compiled to an accuracy of 100 meters by 100 meters, providing detailed and executable information for the subsequent deployment of digital infrastructure. This in-depth mapping initiative is essential to identify specific areas in need of state intervention, thereby promoting a more connected and sustainable Bulgaria. The consultation asked stakeholders about:

- Availability of free optical fibres and/or capacity (Mbps);

-Availability of free fibres, by which standard, whether they are rented and at what price;

- Presence of intentions to deploy VHCNs with a 2026 perspective;

- Supported VHCN access interfaces (speeds, interface type);

- Existence of a planned major upgrade or expansion of networks with a 2026 perspective, up to a download speed of at least 100 Mbps for natural persons and 300 Mbps for legal persons in the locality;

- Determination of the scope (number of households) of the envisaged deployment of very high capacity networks in the locality concerned;

- What quality of service to end-user is achievable in the relevant network based on fibre to the multi-residential building (in the case of fixed networks)/base station (in the case of mobile networks).

(c) Publicly accessible Internet site (at regional and national level) where the consultation was published[75].

The consultation was published on the official website of the Ministry of Transport and Communications (https://www.mtc.government.bg/bg/category/46/publichna-konsultaciya-otnosno-investicionnite-namereniya-v-oblastta-na-izgrazhdane-i-razvitie-na-mrezhi-s-mnogo-golyam-kapacitet), as well as in the 'News' section of the Single Information Point (https://sipbg.gov.bg/).

(d) A recap of the main observations submitted by contributors in each public consultation, specifying how they were addressed.

Within that deadline, feedback was received on investment intentions in the field of construction and development of very high capacity networks from the three major telecom operators, which expressed a high interest in the measure.

The responses largely correspond to the requirements in terms of reliability, quality, availability, assessment of operator plans and coverage presented on the mapping maps performed. All relevant comments have been taken into account in further planning of the intervention in order to minimise distortions of competition.

[75] Paragraph 78.

The summary analysis of the consultation carried out showed that, to date, operators are reporting available free fibres in certain directions and will provide information on specific routes if necessary. The fibres are granted as an irrevocable right of use for a period of 20 years.

Operators indicate that they have no investment intentions to deploy VHCNs in settlements or municipalities below 1 Gbps by 2026 from the list compiled from the mapping exercise.

Information was obtained about the investment intentions of one of the operators in the following directions:

- For a mobile network, in cities up to 5 000 households to extend 5G coverage by adding equipment to existing base stations.

- For a fixed network, modernisation of a network in cities where more than one technology is present.

- Interurban routes – received data on planned interurban routes, and for interurban routes and deviations from the national optical network of the operator does not have the necessary documents for the legal construction of a network.

Operators do not have a planned upgrade or expansion of their networks with a 2026 perspective in settlements, respectively municipalities below 1 Gbps from the list compiled according to the mapping exercise. In the case of a fixed network up to an end-user, a service of up to 1 Gbps may be provided. In the case of a mobile network, speeds of up to 1.5 Gbps can be achieved provided that the terminal equipment supports 5G technology and is located in a coverage area with good radio conditions.

Another operator provides capacity on a commercial basis through the conclusion of various contracts. Payment by customers for the services used is made on a monthly basis, and the contracts themselves have different duration depending on the needs of the particular customer wholesale, respectively retail, incl. business customers of the company. In the event of interest from other electronic communications network operators, Optical fibre shall be leased under the relevant market conditions.

The deployment of very high capacity networks (VHCNs) shall be planned and carried out in accordance with the long-term strategy of the operator concerned. The investments are financed exclusively from own resources, but the Bulgarian operators also participate in the EC initiatives under the Connecting Europe Facility (CEF 2).

For mobile networks, the quality of service depends on multiple factors that are beyond the control of the relevant electronic communications network operator. The quality of the service provided over a mobile network is determined by the installed technologies of the base station, providing the coverage of the location. In case the base station is equipped with 5G technology, the service to the end user may exceed 1 Gbps.

In addition, the competent administrations in the country constantly maintain an ‘open door policy’ beyond the specific consultation, by organising regular meetings and open discussions with operators in the country. The Bulgarian side continues to monitor the investment plans of the operators.

6. Market failure as regards backhaul networks

6.1. Please clarify whether the subsidised backhaul networks support:

☐ Fixed access networks ☐ Mobile access networks ☒ Both of them

6.2. Please indicate the technical characteristics of the subsidised backhaul networks, including their desired level of performance, reliability, capacity or dimensioning[76].

The open access network should provide a broad functionality, ensuring a high level of security of transmitted data and isolation between telecommunications operators and administrative authorities in municipal centres.

6.3. Please explain the expected development of fixed or mobile access networks based on current and future end-users' needs and why the existing or planned backhaul capacity cannot cope with such expected development, submitting verifiable supporting evidence thereof (*e.g.*, independent surveys)[77].

.....

6.4. Please clarify whether State intervention is considered necessary, because existing backhaul networks provide a suboptimal combination of service quality and prices[78].

The objectives of the measure are justified in view of the current and future challenges posed by digitalisation and mobile connectivity, especially in rural and remote areas of the country. These objectives shall take appropriate account of the longevity of networks needed to ensure an adequate return on investment as well as the objectives of ensuring equal opportunities for all citizens in terms of their ability to fully participate in the opportunities created by digitalisation.

We believe that state intervention is necessary as it will bring about a material improvement that the market alone would not be able to deliver. The envisaged measures will correct market failures by improving the efficient functioning of markets and enhancing competitiveness. The intervention chosen to address the market failure of fibre-optic backhaul networks will enable the provision of efficient new mobile services and applications, national deployment of efficient mobile networks by 2026, which are necessary to bridge the digital divide and meet the needs for increasing global data use, as well as the ever-increasing efficiency of devices.

6.5. Mapping exercise[79]. Please provide the following information:

(a) Whether the existing or planned backhaul networks are based:

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76 Paragraph 68.
77 Paragraph 68.
78 Paragraph 69.
79 Paragraph 72.

☒ Fibre ☐ other technology with the same performance of fibre

☐ other technologies without the same performance of fibre

(b) Performance criteria of the existing or planned (in the relevant time horizon) backhaul networks that have been mapped.

.....

(c) How future investment plans in the relevant time horizon of the aid measure have been assessed to establish their credibility. *Inter alia*, please indicate:

(i) The evidence requested to, and submitted by, the relevant stakeholders to demonstrate the credibility of their investment plans[80].

.....

(ii) The assessment criteria applied to assess the credibility of future investment plans[81].

.....

(iii) Whether the stakeholders concerned were invited to sign commitment agreements regarding the implementation of the declared investment plans[82].

☐ Yes ☒ No

If yes, please clarify whether such commitment agreements include milestones and obligations to report progress[83].

.....

(iv) Whether the results of the assessment and the relative justified conclusions were communicated to all stakeholders who submitted information about their private investment plans (and how)[84].

(d) Start and the end date of each step of the mapping exercise.

(e) Number and identity of contributors to each step of the mapping exercise.

(f) Intermediate results and final results of the mapping exercise.

(g) Confirmation that the methodology and the underlying technical criteria for mapping have been made publicly available (and how)[85].

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80 Paragraph 85.
81 Paragraph 87. See also paragraph 86.
82 Paragraph 88.
83 Paragraphs88 and 92.
84 Paragraph 91.
85 Paragraph 76.

For the purposes of measure "Large-scale deployment of digital infrastructure on the territory of Bulgaria" in the area of Digital connectivity of Pillar 3: Linked Bulgaria from the National Recovery and Resilience Plan (NRRP), a mapping exercise was carried out on the provision of broadband internet access across the country.

The collected data is an up-to-date mapping of the existing private and public infrastructure and the quality of service using standard indicators for the "mapping" of broadband networks, including for the needs of sectors with specific needs. The mapping and analysis of the communication connectivity and broadband coverage in the country was carried out using a web GIS application using data from the Single Information Point (SIP), the Communications Regulation Commission (CRC) and the telecommunication operators to determine which geographic areas will be covered by the State aid measure under the project.

The above information is available in the "Broadband mapping (BB mapping)" section of the SINGLE INFORMATION POINT at: https://sipbg.gov.bg/Web/?configUrl=https://sipbg.gov.bg/Web/BaseProject/Configs/config.json .

Mapping for mobile and fixed networks was carried out in accordance with the detailed guidelines on broadband infrastructure funding as part of the Broadband Guidelines, which explicitly refer to the Body of European Regulators for Electronic Communications (BEREG) Guidelines for Geographical Surveys and Network Deployment.

MTC sent a specialized Backhaul Questionnaire to telecommunications operators for backhaul and distribution networks and their transmission points in the 4947 settlements without 1 Gbps access. The Questionnaire was sent to all 402 operators registered in SIP and additionally to the technical contact points of the three big telecom operators. The form was filled in by the relevant optical infrastructure operators. Network infrastructure data was collected according to their location at the level of a settlement. The obliged person (the operator) is responsible for the correctness of the filled-in data. In case of doubt, MTC kept the possibility of verifying the accuracy of the data, including by on-site verification if necessary.

For the purpose of the questionnaire: A transfer point (TP) is a physical network interface that represents an interface between a higher- and lower-level network. The transmission point includes the technical equipment needed to connect the networks. It is essential that the existing optical cable at a given location can be connected to a new cable route or active element with sufficient capacity equivalent to optical connectivity. This is for example an interface in a node called POP (Point of Presence), CO (Central Office), DP (Distribution Point) or AP (Access Point).

For the purposes of the questionnaire: a transmission point is any network element that allows the connection of fiber optic cables (for example, a cable cabinet, fiber optic coupler, street cabinet, fiber optic cabinet in a central office or point of presence, switch, fiber optic connector array, or port of an active element in an access point). A peering center is a data node where the networks of individual operators are connected for the purpose of exchanging data traffic. The result of the interconnection of all such networks around the world is the global Internet.

The availability of optical network was assessed on bases of the following questions:

Do you have an optical network (single-mode fiber according to ITU-T specifications G. 652 to G. 657; backbone/access network) with sufficient capacity to provide public electronic communications services at the point of transmission?

Operators fill in "YES" if: - it is possible to use the relevant optical network to provide public electronic communication services to end users in the cadastral territory of the relevant municipality or it is possible to create a transmission point within a period of 3 months if interest is expressed; - the relevant optical network has sufficient capacity (number of fibers, data transmission capacity, etc.) to build a transmission point in the cadastral territory of the municipality. Sufficient capacity of the fiber-optic network is considered such transmission capacity, which is able to ensure reliable data transmission with a transmission (download) speed of 100 Mbit/s between the peering center and the client for all subscribers of the downstream network in the cadastral territory of the municipality; - the relevant optical network is composed only of single-mode fibers in accordance with the specifications ITU-T G. 652 to G. 657 (the majority of single-mode fibers manufactured after 1990 comply with these specifications). The above YES completion points must be completed cumulatively. If any of the above points are not met, the operator must fill in NO.

The ability to offer/provide fiber optic network capacity was based on the following questions:

Can you offer/provide the real capacity of your optical network (backhaul) to another provider for the provision of public electronic communication services?

Operators fill in "YES" if they already offer wholesale the possibility for enterprises providing electronic communication networks and services in the respective municipality to use the respective fiber optic network (e.g. by providing data connectivity, fiber optic rental, etc.) to provide of public electronic communication services to end customers or have the desire and technical readiness to provide the relevant optical network to the electronic communication enterprises for the above-mentioned purpose within 3 months from the expression of interest (e.g. signing a contract).

Operators fill in "NO" if they are not able to offer/provide their fiber network capacity in sufficient volume according to the fiber network availability question. Ability to offer/provide connectivity from the transmission point to the peering center.

Can you offer connectivity from a transfer point in a municipality to a peering center using optical cables (with single-mode fiber according to ITU-T specifications G. 652 to G. 657)?

Obliged persons fill in "YES" if they are able to ensure the connectivity of an existing or newly constructed transmission point providing access to the relevant optical network in the municipality to connect to the peering center exclusively via optical fibers along the entire route. Only single-mode fibers conforming to one of the ITU-T specifications G. 652 to G. 657 (the majority of optical fibers produced after 1990 conform to these specifications) may be used to provide connectivity with the peering center. It is not necessary that the optical connection to the peering center is provided by only one optical network operator. The requirement to

provide connectivity to the peering center can also be fulfilled through the optical network of another operator(s). Operators fill in "NO" if they cannot provide full fiber network capacity to the parity center.

Responses to the Backhaul questionnaire were received from 50 telecom operators. Most of the operators responding to the Questionnaire declared they do not have a fibre network with sufficient capacity to provide public electronic communications services in the settlements with less than 1 Gbps access.

A positive response to the questionnaire was received from only 15 operators, including the three big telecom operators - Vivacom, A1 and Cetin, and some concrete regional operators - BG Info, Sky fiber, Bulgartel, Elfebg, Comnet, Bdincom, Vdsbg, Evrocom-Yakoruda, Escom, Vipnet and Zonata-Invest.

The experts from MTC prepared a detailed analyze and summarized the data.

Some of the telecom operators answered with "yes" about the availability of optical network with sufficient capacity to provide public electronic communications services at the point of transmission in only 536 settlements from those 4947 without 1 Gbps access. They confirmed that is possible to use the relevant optical network to provide public electronic communication services to end users in the cadastral territory of the relevant municipality or it is possible to create a transmission point within a period of 3 months if interest is expressed and the relevant optical network has sufficient capacity to build a transmission point in the cadastral territory of the municipality.

Some of the telecom operators answered with "yes" about the ability to offer/provide the real capacity of their optical network (backhaul) to another provider for the provision of public electronic communication services in 280 settlements. They confirmed that they already offer as wholesale the possibility for enterprises providing electronic communication networks and services in the respective municipality to use their fiber network (e.g. by providing data connectivity, fiber optic rental, etc.) to provide public electronic communication services to end customers or have the desire and technical readiness to provide the relevant optical network to the electronic communication enterprises for the above-mentioned purpose within 3 months from the expression of interest (e.g. signing a contract).

In 262 settlements the telecom operators can offer connectivity from a transfer point in a municipality to a peering center using optical cables. These operators guaranteed that they are able to ensure the connectivity of an existing or newly constructed transmission point providing access to the relevant optical network in the municipality to connect to the peering center exclusively via optical fibers along the entire route.

6.6. Public consultation. Please provide the following information:

(a) Start and end date of each public consultation carried-out[86].

[86] In this regard, see paragraph 82 and footnote (66).

(b) Content of each public consultation[87].

(c) Publicly accessible Internet site (at regional and national level) where the consultation was published[88].

(d) A recap of the main observations submitted by contributors in each public consultation, specifying how they were addressed.

7. Appropriateness of the aid as a policy instrument

7.1. Please explain why alternative, less distortive measures to State aid (*e.g.*, administrative measures, regulatory measures, market-based instruments, loans, tax measures, etc.) are not capable of addressing the objective(s) of the aid measure and the identified market failure[89].

The intervention shall ensure equal opportunities for all end-users in terms of their ability to fully participate in the opportunities of digitalisation. Following the country-wide coverage mapping exercise, a market failure was identified in the target areas, both in terms of availability of VHCN and adequate digital services and in terms of their accessibility. The measure will contribute to the Gigabit Society Strategy objective that 100% of the population will have access to broadband connectivity with a download speed of at least 100 Mbps under peak-time conditions by 2025.

The proposed State aid measure is an appropriate policy instrument to address the lack of private investment intentions to build VHCNs due to the identified market failure. As explained above, the main problem in the target areas is the lack of the necessary infrastructure.

According to the Bulgarian authorities, however, the lack of interest in building very high-speed networks is difficult to address with alternative, less distortive means, such as regulatory measures, as adequate private investment has not been made in the target areas or will not be made until 2026. Despite the crucial role that regulation plays in ensuring competition and offering in the market of electronic communications, the regulatory measures imposed by the NRA (CRC) (obligations for access and use of specific network elements, transparency, non-discrimination obligations and price control requirements) have not solved the problems related to the lack of VHCN infrastructure in the target areas.

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87 Paragraphs 78, 79 and 81. See also footnotes (64).

88 Paragraph 78.

89 Paragraphs 51 and 95-96.

Ex-ante regulation is not a sufficient tool to allow the provision of high-speed broadband services in the areas subject to the intervention due to the low profitability of such services in these areas. In the same sense, since the necessary infrastructure is not available in the target areas, demand-side measures are not suitable means to solve the problem. Therefore, in view of this, there is no alternative to allocate public funding for the development of the infrastructure necessary to achieve the goal of providing coverage of VHCN in certain areas in Bulgaria.

7.2. Step-change[90].

(a) For an aid measure concerning fixed access networks, please provide the following information:

(i) If the State intervention concerns white or grey areas, please indicate whether the subsidised networks at least triple the download speed provided by existing network(s), and represents a significant new infrastructure investment bringing significant new capabilities to the market (*e.g.*, in terms of availability, capacity, speeds and competition)[91].

The measure ensures a step change as it provides a significant improvement in the availability of affordable high-performance broadband connectivity in the targeted areas. As an effect of the measure, in the target areas, the download speed of the available broadband services will be significantly improved, reaching up to 1 Gbps for end-users (achieving more than a threefold increase in the available speed).

The radical change is ensured by the fact that the State intervention represents a significant investment and will adequately support the growing needs of mobile and fixed access networks. The measure provides for significant investments in passive infrastructure, which ensures a step change as it provides a significant improvement compared to the existing and credibly planned backhaul networks in the target areas.

By financing the construction and upgrade of VHCNs, which in turn will promote the provision of relevant wholesale and retail services at affordable conditions to the benefit of end-users, the measure will help to ensure that efficient online services and applications, including those based on 5G, are provided in the target areas.

(ii) If the State intervention concerns mixed (*i.e.*, white and grey) areas, please state reasons why the dissociation of white and grey areas is not justified[92].

Given the importance of broadband for improving the economic and social well-being of the population, we believe that the implementation of this investment project will create prerequisites for the development of broadband services in the so-called ‘white and grey’ areas, where enterprises have no interest in building VHCNs, due to the low level of return on investment.

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90 As defined at paragraph 19(p). See also paragraphs 97-98 and footnote (72).

91 Paragraph 102. See also footnote (74).

92 Paragraph 104.

Moreover, please confirm that the following cumulative conditions are fulfilled[93]:

- The overbuilding of the grey areas[94] does not create undue distortions of competition, based on the results of a public consultation.

State aid and the potential distortions of competition it could lead to are limited to the minimum necessary under the measure.

- The overbuilding is limited to maximum 10 % of all premises in the target area.

- The subsidised networks at least triple the download speed provided by network(s) already existing in the white part of the mixed area, and provide substantially better services than the ones available in the grey part of the mixed area.

.....

(iii) If the State intervention concerns black areas, please confirm that the subsidised networks fulfil the following cumulative conditions[95]:

- They at least triple the download speed provided by the existing networks.

- They provide a download speed of at least 1 Gbps and an upload speed of at least 150 Mbps.

- They represent a significant new infrastructure investment bringing significant new capabilities to the market (*e.g.*, in terms of availability, capacity, speeds and competition).

.....

(b) For aid measure concerning mobile access networks, please explain if and how the aid measure will ensure an improvement of mobile services' availability, capacity, speeds and competition capable of fostering the adoption of new innovative services[96].

.....

(c) For aid measure concerning backhaul networks, please explain if and how, as a result of the State intervention, the subsidised networks represent a significant

93 Paragraph 105.
94 As defined at paragraph 19(n).
95 Paragraph 108.
96 Paragraph 109. See also paragraphs 110-111.

investment in backhaul infrastructure and adequately support the increasing needs of fixed and/or mobile access networks[97].

.....

8. Proportionality of the aid

8.1. Competitive selection procedure.

(a) Please indicate whether the aid is granted on the basis of an open, transparent and non-discriminatory competitive selection procedure, in line with the principles of public procurement[98].

☒ Yes ☐ No

(b) If yes:

(i) Please explain if and how the design of the competitive selection procedure is capable of fostering the widest possible participation[99].

The measure is designed in such a way as to minimise the State aid involved and any distortion of competition by implementing the following actions:

The necessary detailed mapping, coverage analysis and public consultation has been carried out as described above. The coverage analysis carried out shows existing broadband infrastructures as well as investment plans until the end of 2026 to identify areas where public intervention is needed. The results of the mapping exercise were presented in the public consultation, as required by paragraph 78 of the Broadband Guidelines. All interested parties were given the opportunity to submit their comments. The measure will provide support in 'white and grey' areas where there is no expressed interest in the deployment of VHCN by private investors by 2026. In view of the qualitative implementation of the measure, it is accepted to use the country's division into geographical planning areas – North-West Region, North Central Region, North-East Region, South-East Region, South-West Region, South Central Region – which will contribute to minimising the risk of shrinking private investment and distorting competition.

The financial aid for this initiative will be administered through a gap funding model, employing direct grants awarded to selected undertakings via a competitive selection process. The grants provided will constitute up to 90% of the total eligible costs incurred. The infrastructures developed under this program will be entirely owned by the beneficiaries.

The total budget allocated for this financial aid is outlined in the National Recovery and Resilience Plan, with funds expected to be available until a specified date. The financial aid is designed to cover up to a specified maximum percentage of the eligible costs related to the construction of the infrastructure. This cap represents the highest aid intensity bidders in the tender process may request. The final amount of aid granted will be determined based on the

97 Paragraph 112. See also paragraphs 113-114.
98 Paragraph 117.
99 Paragraph 118.

outcomes of the tender process and will not exceed this predetermined aid intensity. The justification for the stipulated aid intensity includes several key factors:

Challenging Geography:

- The orography of the target areas often complicates infrastructure deployment, necessitating substantial investment.
- The geographic challenges inherent in these regions escalate the costs associated with establishing and securing necessary infrastructures.

Low Profitability in Target Areas:

- Many of the targeted areas are located in rural and remote parts of the country, characterized by low population density.
- This demographic factor is crucial, particularly given the high operational costs associated with mobile networks, such as maintenance and electricity, which diminish the areas' profitability.

Need for Further Investment:

- There is a significant requirement for additional investment in active equipment essential for realizing the full potential of the deployed solutions.

These factors collectively underscore the economic challenges faced in these areas, impacting the viability of investments needed to develop the infrastructure. The increased costs and reduced revenue potential compared to similar projects in more densely populated regions justify the need for higher aid intensity to ensure the successful implementation and sustainability of the infrastructure projects.

Cost Eligibility

The scope of cost eligibility for financial aid under this initiative is meticulously defined to ensure a structured and accountable deployment of the infrastructure, specifically focusing on the passive components of the fiber-based backhaul network essential for connecting base stations.

Eligible Costs

The following categories are designated as eligible for financial aid, as they are critical to the deployment of both passive and active components of the infrastructure:

- Infrastructure and Civil Engineering: Includes all construction and civil engineering works necessary for laying fiber optic cables and installing related infrastructure.
- Equipment and Materials: Encompasses all hardware and materials required for the operation of the network, such as fiber optic cables, network interface devices, and other elements necessary for fiber lighting and data traffic management.
- Staff Costs: Covers salaries and wages of personnel directly involved in the project, from the planning and engineering phases through to the execution and operational stages.

- Additional Expenditures: Encompasses a broad range of ancillary costs including project preparation, permit acquisition and management, and procurement of equipment strictly necessary for project execution.

Additionally, costs associated with establishing irrevocable rights of use (IRUs) for the connection of the base stations are recognized as eligible. These expenditures are critical for securing long-term access to the infrastructure necessary for network operation.

Exclusions from Eligibility

However, there are specific exclusions within the eligibility criteria to ensure that the aid is utilized strictly for the intended purpose of enhancing network infrastructure:

- Legal and Regulatory Obligations: Costs incurred in fulfilling legal obligations or investments required to meet coverage obligations associated with the rights of use of spectrum are not covered by this financial aid. This stipulation ensures that the aid is not used to offset costs that should be covered by the spectrum license holders themselves.
- Coverage Obligations: Infrastructure developed with the aid of this financial support will not count towards meeting any coverage obligations tied to spectrum usage rights. Additionally, the call for tenders will mandate that aid beneficiaries formally commit in writing not to report the deployment of this infrastructure for fulfilling such coverage obligations.

These cost eligibility guidelines are designed to facilitate a transparent, efficient, and effective allocation and use of financial resources, thereby fostering the development of a robust and reliable digital infrastructure.

Beneficiaries Obligations and Conditions

The entities awarded tenders for the deployment of infrastructure within the designated target areas will be recognized as the beneficiaries of the financial aid. These undertakings are entrusted with a crucial role in advancing the regional digital infrastructure and are subject to specific obligations and conditions to ensure the broad and equitable dissemination of the aid's benefits.

Obligations of the Aid Beneficiaries

- Provision of Access to Passive Infrastructure: Beneficiaries are required to provide other operators with unrestricted access to the passive infrastructure they deploy. This access should be granted indefinitely from the date the infrastructure is completed. The intention behind this stipulation is to maximize the utility of the funded infrastructure by enabling a wider range of service providers to deliver telecommunications services, thereby enhancing competitive market conditions.
- Conditions for Infrastructure Access: Access to this infrastructure must be provided under conditions that are transparent, fair, and non-discriminatory. This framework ensures that all potential users have an equal opportunity to utilize the infrastructure, fostering an inclusive market environment. Consequently, access seekers indirectly

benefit from the financial aid as they can avail themselves of wholesale access services without direct participation in the funding initiative.

- Operational Duration Requirement: Beneficiaries are mandated to operate the financed infrastructure for a minimum duration of [twenty years] following the project's completion. This long-term operational commitment ensures the sustained availability and maintenance of the infrastructure, thereby securing ongoing benefits from the initial investment.
- Continuity of Access Obligations: The obligations to provide access to the infrastructure remain binding regardless of any changes in the ownership, management, or operational control of the infrastructure. This condition guarantees that the infrastructure continues to serve its intended public and economic benefit, irrespective of corporate restructuring or ownership transfers.

Restrictions and Exclusions

- Compliance with Previous Aid Regulations: Financial aid will not be extended to any undertaking that has previously received unlawful aid, which was declared incompatible by a decision of the Commission, unless such undertaking has reimbursed the total amount of the incompatible aid, along with accrued recovery interest, into a blocked account.
- Exclusion of Undertakings in Difficulty: In line with the "Guidelines on State aid for rescuing and restructuring non-financial undertakings in difficulty"[100] aid will not be granted to undertakings that are currently facing significant financial hardships or operational challenges. This exclusion ensures that the aid is allocated to entities that are stable and capable of fulfilling the long-term commitments required by the aid conditions.

These structured obligations and conditions are designed to ensure that the deployment of infrastructure through financial aid effectively contributes to the digital advancement of the targeted regions, maintaining integrity and sustainability throughout the operational lifecycle of the infrastructure.

Absorption Rates and Measures to Limit Competition Distortion

Rates of absorption and need for measures to limit competition distortion have strong interlink between. To analyze the rates of absorption of the financial aid within the context of the potential negative effects of competition, it's crucial to consider both the deployment strategies and the specific measures implemented to mitigate any distortive effects on competition.

Financial Aid Absorption Rates

There are several factors that needs to be analyzed in the context of financial aid absorption rates. It is important to follow the effectiveness and efficiency of aid utilization in the deployment of broadband infrastructure.

Project Implementation Timelines:

[100] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52014XC0731%2801%29

- The rate at which financial aid is absorbed is highly dependent on the adherence to detailed project timelines. Delays in project milestones due to logistical, regulatory, or technical issues can significantly slow down fund absorption.
- Effective project management, timely procurement, and adherence to scheduled activities are essential for maintaining the momentum of fund utilization.

Efficiency of Grant Utilization:

- The absorption rate is also influenced by how efficiently the grants are utilized by the recipients. This includes the adequacy of the financial resources allocated towards various project components such as civil works, technological equipment, and human resources.
- Overestimations or underutilizations can lead to discrepancies in planned versus actual spending, affecting the overall absorption pace.

Capacity of Beneficiaries:

- The technical and administrative capacity of the entities receiving the aid plays a critical role in determining the absorption rate.
- Beneficiaries with robust project management capabilities, experience in large-scale infrastructure projects, and adequate financial handling skills are more likely to utilize the funds effectively within the given timelines.

Regulatory and Administrative Efficiency:

- The bureaucratic processes involved in disbursing funds and approving project stages can either facilitate or hinder the quick absorption of financial aid.
- Simplified procedures, clear regulatory guidelines, and efficient administrative support from government bodies are crucial for smoothing the flow of funds.

Monitoring and Evaluation Mechanisms:

- Regular monitoring and rigorous evaluation of project progress and financial management practices help in identifying bottlenecks early and adjusting strategies accordingly to enhance fund absorption.
- These mechanisms ensure that funds are being used as intended and help in making necessary adjustments to project plans or fund allocations.

Flexibility of Funding Mechanisms:

- The ability to adjust funding allocations based on evolving project needs without lengthy bureaucratic processes can significantly affect the absorption rate.
- Dynamic funding mechanisms that allow for reallocation of resources between project components based on real-time needs and challenges can lead to more efficient use of financial aid.

Impact of External Factors:

- External factors such as economic conditions, changes in technology, and market dynamics can influence the rate at which financial aid is absorbed.
- For instance, a sudden increase in the cost of materials or labor can lead to underspending or the need for additional funds, thereby affecting the absorption rate.

By focusing on these aspects, the authorities can ensure that financial aid not only meets its intended developmental goals but also maintains a high rate of absorption, maximizing the impact of the investment and ensuring that the projects contribute positively to the technological and economic landscape of Bulgaria.

Measures to Limit Competition Distortion

The financial aid described in the document is primarily focused on bridging digital divides by promoting infrastructure development in underserved areas. This inherently carries a risk of distorting competition by potentially providing an unfair advantage to selected companies receiving the aid, altering market dynamics unfavorably, and deterring private investment. Therefore, specific measures will need to be taken in order to limit potential distortion of competition:

Transparent and Competitive Tender Processes:

- Ensuring that the allocation of financial aid and selection of beneficiaries is conducted through transparent and competitive tendering processes.
- This approach minimizes the risk of favoritism and ensures that the most capable and efficient service providers are chosen, fostering a fair competitive environment.

Setting Clear Eligibility Criteria:

- Establishing stringent and transparent eligibility criteria for potential beneficiaries can ensure that only undertakings capable of fulfilling the long-term goals of the projects are selected.
- This also prevents companies that have previously received incompatible aid or are financially unstable from gaining an undue advantage.

Claw-back Mechanisms:

- Implementing robust claw-back mechanisms as described in this document ensures that any excess aid beyond the reasonable profit margin is returned.
- This discourages firms from becoming overly dependent on state aid and encourages them to operate efficiently.

Monitoring and Compliance:

- Regular monitoring of the beneficiaries and strict compliance checks can prevent the misuse of aid.
- This includes ensuring that funded infrastructures are not used to fulfill coverage obligations already mandated by regulatory authorities, thereby preventing double-dipping and ensuring aid is used as intended.

Limiting Market Distortion through Gradual Deployment:

- Gradual and phased deployment of infrastructure projects can help in assessing their impact on competition periodically.
- This allows adjustments in policy or strategy to minimize any unforeseen adverse effects on the competitive landscape.

Encouraging Market Entry and Reducing Barriers:

- The aid scheme should be designed to lower entry barriers for new entrants and smaller players by providing them access to critical infrastructure.
- This can be achieved by mandating beneficiaries to offer wholesale access to their infrastructure under fair, reasonable, and non-discriminatory terms.

Economic and Market Studies:

- Conducting periodic economic and market studies to assess the impact of the aid on competition.
- These studies can help in understanding market dynamics and adjusting aid policies to mitigate any negative impacts effectively.

By integrating these measures, the aid program can enhance its effectiveness while safeguarding competitive conditions in the Bulgarian telecommunications market. These strategies align with EU guidelines on state aid, which emphasize preventing market distortion while fostering economic development through judicious use of public resources.

Determination of Reasonable Profit through WACC Methodology

In the context of providing financial aid for infrastructure deployment within the telecommunications sector, the determination of reasonable profit is essential to ensure balanced economic incentives and safeguard the sustainability of investments. The Bulgarian Communications Regulation Commission (CRC) employs sophisticated financial models, specifically the Weighted Average Cost of Capital (WACC) and the Capital Asset Pricing Model (CAPM), as foundational frameworks to derive reasonable returns on assets within cost models. These models are critical when setting prices for access to and use of channel networks, particularly in the market for access to passive (physical) infrastructure.

Application of WACC in Regulatory Pricing

The WACC is universally recognized for its effectiveness in calculating the cost of capital for businesses, particularly in regulatory environments where entities are mandated to apply cost-oriented pricing strategies. This approach facilitates the establishment of fair and economically justified price ceilings for services, ensuring that providers can cover their capital costs while maintaining reasonable profit margins. This method is not only recommended but also widely implemented by the European Commission and various regulatory bodies across Europe, underscoring its reliability and relevance.

European Commission's Involvement and Standardization Efforts

Recognizing the disparities in WACC calculation methodologies across Member States and the potential adverse effects on investment incentives within the Digital Single Market, the European Commission has been proactive. In November 2019, the Commission issued a Notice on the calculation of capital expenditure on existing infrastructure, specifically addressing national notifications within the electronic communications sector of the EU. This Notice clarifies the methodology for calculating WACC parameter values and standardizes the assumptions used in these calculations.

The Commission's directive aims to harmonize the regulatory practice across the EU, thereby fostering a more consistent and convergent environment for investments in electronic communications networks. This standardization is crucial for eliminating potential barriers that could impede the development of the internal market and ensuring a level playing field for all market participants.

CRC's Implementation of EC Guidelines

In alignment with the European Commission's directives, the CRC adopts the methodologies outlined in the EC Notice for its regulatory practices. The CRC further refines its approach by integrating data from BEREC's WACC Parameters Report 2023, which offers the latest insights and parameters essential for the accurate determination of WACC. This meticulous approach ensures that the parameters used are reflective of current economic conditions and industry standards, thereby enhancing the accuracy and relevance of the cost models employed.

Through the careful application of these sophisticated financial and regulatory models, the CRC endeavors to support the development of a robust telecommunications infrastructure in Bulgaria. This approach not only aligns with European standards but also promotes fair competition and stimulates continued investment in the nation's digital infrastructure, pivotal for advancing Bulgaria's position within the Digital Single Market.

Calculation of WACC

In the intricate process of setting access prices for passive (physical) infrastructure, specifically the underground duct network, CRC adheres to a sophisticated financial methodology dictated by European standards. This involves calculating the WACC, a critical financial metric used to ensure that pricing models are economically viable and reflective of the prevailing market conditions. The CRC's approach to determining WACC values is aligned with the European Commission's Notice on WACC dated 6 November 2019, and leverages the comprehensive guidelines set forth in BEREC's fourth report published in June 2023, the "WACC Parameters Report 2023"[101] (WACC Parameters Report 2023).

Calculation of WACC Parameters by BEREC

The Body of European Regulators for Electronic Communications (BEREC) plays a pivotal role in standardizing the calculation of WACC across the EU, ensuring a harmonized approach that aligns with the European Commission's directives. The WACC Parameters Report 2023 issued by BEREC offers a detailed breakdown of essential financial parameters necessary for calculating WACC:

General Economic Conditions:

- Risk-Free Rate of Return (RFR): This parameter is critical as it represents the return on investments perceived as risk-free, such as government bonds. BEREC estimates the

[101] BoR (23) 90, of 8 June 2023, https://www.berec.europa.eu/en/document-categories/berec/reports/berec-report-on-wacc-parameter-calculations-according-to-the-european-commissions-wacc-notice-of-6th-november-2019-wacc-parameters-report-2023

RFR for each EU member state, providing a foundational economic indicator that reflects the baseline return investors would expect without any risk.

- Equity Risk Premium (ERP): The ERP accounts for the additional return that investors demand over the risk-free rate to compensate for the risk associated with investing in equity. This parameter is crucial for adjusting the cost of equity to reflect the specific risk profile of the telecommunications sector.

Parameters Specific to a Peer Group:

- In its robust analysis, BEREC identifies a 'peer group' of 15 companies deemed comparable based on criteria outlined in the EC Notice. This peer group provides a relevant benchmark for evaluating financial metrics in the telecommunications infrastructure sector.
- Beta Ratios of Equity: Each company's beta ratio is assessed, which measures the volatility of a company's stock in relation to the market. This indicator is vital for understanding the risk inherent in investing in these companies compared to the broader market.
- Degree of Indebtedness: The proportion of debt in a company's capital structure is calculated, providing insight into the financial leverage and risk profile of the company.
- Debt Premium and Cost of Debt: These parameters estimate the additional cost that a company bears for taking on debt over risk-free securities, reflecting the perceived risk of lending to the company.

Peer group companies identified in the BEREC report as at March 31, 2023:

Operator	State	S&P Rating
Deutsche Telekom AG	DE	BBB
DIGI Communications N.V.	RO	BB-
Elisa Oyj	FI	BBB+
Koninklijke KPN N.V.	NL	BBB
NOS	PT	BBB-
Orange S.A.	FR	BBB+
Proximus S.A.	BE	BBB+
Tele 2 AB	SE	BBB
Telecom Italia	IT	B+
Telefónica	ES	BBB-
Telekom Austria AG	AT	A-
Telenet Group Holding N.V.	BE	BB-
Telenor	NO	A-
Telia Company AB	SE	BBB+
Vodafone Group plc	UK	BBB

The post-tax WACC formula includes the following elements:

WACC = Re*E/ (D+E) + Rd*D/ (D+E) * (1-t)

Where:

- **Re (Cost of Equity)**: This is the return that equity investors expect on their investment in the company. It compensates the investors for the risk undertaken in investing their capital.
- **Rd (Cost of Debt)**: This is the effective rate that a company pays on its current debt. Unlike cost of equity, cost of debt is typically lower due to its precedence in repayment during liquidation and its tax-deductibility.
- **D (Market Value of Debt)**: Represents the total value of a company's debt. In financial models, using the market value of debt rather than its book value provides a more accurate reflection of the economic reality.
- **E (Market Value of Equity)**: Reflects the total value of the company's equity, calculated as the current market price per share multiplied by the total number of outstanding shares.
- **G (Gearing Factor)**: Also known as the leverage ratio or financial leverage, this ratio D/(D+E) indicates the proportion of debt in the company's capital structure relative to its equity. It is a critical indicator of the company's financial stability and risk profile.
- **t (Marginal Corporate Tax Rate)**: This is the rate at which the company's additional income is taxed. The tax rate affects the WACC calculation through the tax shield on debt, which reduces the effective cost of debt to the company.

Application of the Benchmark Method by National Regulatory Authorities

National regulatory authorities, like the CRC, utilize these parameters within the benchmark method to calculate WACC. This method involves comparing the company or sector in question against the established benchmarks from the peer group, ensuring that the WACC reflects both the specific economic conditions and the inherent risks of the industry. This standardized approach facilitates fair, transparent, and consistent pricing practices across the EU for access to critical telecommunications infrastructure.

By integrating these detailed financial analyses and methodologies, the CRC ensures that pricing for access to Bulgaria's passive infrastructure is both competitively fair and economically justified, supporting the broader objectives of investment and development within the EU's Digital Single Market.

In the following parts of the analysis are presented explanations and the values used of all parameters for calculating WACC in accordance with the common methodology.

Calculation of Cost of Debt (Rd)

The cost of debt (Rd) is a pivotal financial metric used to assess the effective rate they pay on their borrowed capital. This rate encapsulates the expense of utilizing debt as a form of financing, including interest or financial charges incurred on outstanding borrowings. Accurately calculating the cost of debt is essential for enterprises as it influences financial strategies, impacts corporate finance decisions, and is crucial for investment evaluations.

The cost of debt is calculated using a formula that integrates both the risk-free rate of return and an additional debt premium that accounts for the credit risk associated with the borrowing entity:

Rd = RFR + Debt Premium

Where:

- **RFR (Risk-Free Rate of Return)**: This is the theoretical rate of return of an investment with zero risk, representing the interest an investor would expect from an absolutely risk-free investment. The risk-free rate is typically derived from the yield on government securities, such as treasury bonds, which are considered free from credit risk because they are backed by the monetary authority of the country.
- **Debt Premium**: This component reflects the additional return that lenders require to compensate them for the risk undertaken beyond the risk-free rate. The debt premium varies according to the borrower's creditworthiness, market conditions, and the overall economic environment. It is influenced by factors such as the company's credit rating, financial health, and the perceived risk of default. A higher debt premium indicates a higher perceived risk associated with lending to the company.

Risk-free Rate of Return (RFR)

The Risk-Free Rate of Return (RFR) is a fundamental component in the financial modeling of cost-setting, particularly within regulated industries such as telecommunications. The RFR serves as the baseline rate from which additional risks are measured, representing the minimum return investors would expect from an absolutely risk-free investment. Financially, risk is characterized by the variability or deviation of actual returns from those that are expected. An ideal risk-free asset is one where the actual returns are consistently equivalent to the expected returns, devoid of any risks pertaining to default or reinvestment.

In the telecommunications sector, the RFR is critical for aligning the profitability of investments with the depreciation timelines of telecom assets. These assets typically have prolonged operational lifespans, necessitating the use of long-term financial benchmarks. Typically, zero-coupon government securities, which do not entail interim cash flows and are backed by the sovereign assurance of governments, are utilized as proxies for risk-free investments in this context.

Following the guidelines established in the European Commission Notice, CRC calculates the RFR based on the yield of Bulgarian government bonds that have a ten-year maturity. This

methodological approach is detailed in the WACC Parameters Report 2023, which outlines that the risk-free premium was determined to be 0.76%[102] based on an average monthly yield observed over a five-year period from April 2018 to March 2023. These calculations incorporate long-term interest rates issued for convergence purposes by both the Bulgarian National Bank (BNB) and the European Central Bank.

Acknowledging the dynamic nature of economic conditions, such as the recent uptrend in government bond yields driven by escalating interest rates, the CRC has adapted its observation period to enhance the relevance and accuracy of its RFR estimation. The updated observation period now spans from January 2019 to December 2023. Reflecting these macroeconomic shifts, the recalculated RFR for Bulgarian government bonds with a remaining ten-year maturity has been adjusted to **1.23%**[103].

Debt Premium

The debt premium represents the additional return that creditors or investors require from a company over and above the risk-free rate to compensate for the risk of lending. This premium is crucial in financial models as it directly influences the cost of capital and, by extension, the pricing strategies in regulated sectors such as telecommunications. The magnitude of the debt premium is primarily influenced by the perceived credit risk and the credit rating of the company. Typically, the debt premium is derived by analyzing the yields on corporate bonds relative to those on long-term government bonds, which act as the benchmark for the risk-free rate.

BEREC adheres to a standardized method for calculating the debt premium, which involves assessing the yield on long-term corporate bonds of each company within the designated "peer group" relative to the risk-free norm. This assessment effectively captures the additional risk perceived by investors in lending to these corporations compared to sovereign debt.

The primary data source for this analysis is Bloomberg, a widely recognized platform in the financial and corporate sectors, known for its comprehensive and reliable financial data. According to the European Commission's guidelines, the specific risk or debt premium for each company is quantified as the difference between the yield on the company’s 10-year bonds and the yield on 10-year government bonds from the country where the company is headquartered. Subsequently, an arithmetic mean of these differences is calculated for each entity within the peer group.

CRC utilizes the debt premium data from all 15 enterprises identified by BEREC within the "peer group". This approach ensures a robust analysis by covering a diverse array of

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[102] BoR (23) 90, page 55 https://www.berec.europa.eu/en/document-categories/berec/reports/berec-report-on-wacc-parameter-calculations-according-to-the-european-commissions-wacc-notice-of-6th-november-2019-wacc-parameters-report-2023

[103] https://www.bnb.bg/Statistics/StMonetaryInterestRate/StInterestRate/StIRKeyIRAndYieldOnGS/index.htm

enterprises operating across multiple countries, which helps in mitigating the risks associated with economic and political fluctuations.

The calculated debt premium used by the CRC in its financial models is the arithmetic mean of all the debt premiums determined for the peer group. As reported in BEREC's WACC 2023 Parameters Report, this mean is 148 basis points, or **1.48%**[104].

Combining this calculated debt premium with the risk-free rate of return, the CRC computes the total cost of debt (Rd). With the risk-free rate previously recalculated at 1.23%, the total cost of debt is determined by summing this risk-free rate with the debt premium. Therefore, the total cost of debt (Rd) utilized by the CRC is **2.71% (Rd = RFR + Debt Premium).**

Calculation of Cost of Equity (Re)

The cost of equity is a critical component in the financial analysis of regulated industries like telecommunications. It represents the return that investors require to compensate them for the risk of investing in a company's equity. Accurately calculating this cost is essential for setting fair rates that can cover the company's cost of capital while promoting sustainable investment.

Application of CAPM in Regulatory Financial Models

CRC employs the Capital Asset Pricing Model (CAPM) to calculate the cost of equity, following guidelines stipulated in the EC Notice. CAPM is widely recognized for its robust theoretical foundation and its straightforwardness in application, making it the preferred choice among national regulators for estimating the cost of equity.

The CAPM is based on the premise that the expected return on an asset (in this case, equity) should be commensurate with its risk level relative to the market. This model is particularly advantageous because it delineates the relationship between risk and return in a clear and quantifiable manner, facilitating transparent regulatory practices.

The formula used to calculate the cost of equity via CAPM is expressed as follows:

Re = RFR + β* ERP

Where:

- **Re** represents the cost of equity.
- **RFR (Risk-Free Rate)** denotes the yield on risk-free investments, typically government bonds, which serves as a baseline return that investors would expect from an entirely risk-free investment.
- **β (Beta)** is the equity beta factor, also known as the geared beta. This metric measures the volatility or systemic risk of a company's stock in comparison to the market as a whole. A higher beta indicates greater volatility and, consequently, a higher risk associated with

[104] BoR (23) 90, page 26 https://www.berec.europa.eu/en/document-categories/berec/reports/berec-report-on-wacc-parameter-calculations-according-to-the-european-commissions-wacc-notice-of-6th-november-2019-wacc-parameters-report-2023

the investment.

- **ERP (Equity Risk Premium)** reflects the additional return over the risk-free rate that investors require to invest in the market as a whole rather than in risk-free securities. This premium compensates investors for taking on the higher risk associated with equity investments compared to risk-free assets.

Risk-free Rate of Return (RFR)

The methodology for calculating the risk-free rate of return is presented in item 6.1.1.1. in the part related to the cost of debt, the value being **1.23%.**

Beta Coefficient (β)

The beta coefficient (β) is a financial metric that measures the volatility - or systematic risk - of an entity's shares relative to the broader market. It is an essential factor in the CAPM, where it helps to determine the equity risk premium and, consequently, the pricing of equity. Essentially, beta reflects how sensitive a company's stock price is to market movements, indicating the extent to which the returns on a company's equity are expected to fluctuate in relation to a market index.

Beta exclusively measures systemic risk, which is the type of risk inherent to the entire market or market segment. This risk cannot be mitigated through diversification alone, unlike unsystematic risk, which is specific to a single asset or company. Systemic risks might include macroeconomic factors such as inflation rates, exchange rates, political instability, or significant economic downturns. The calculation of beta is thus critical for investors and financial analysts as it provides a quantifiable measure of inherent market risk that an investment carry.

Beta is typically estimated through regression analysis, which assesses the relationship between the returns on an operator's shares and the returns on a broad market index. For regulatory purposes and broader financial analysis within the telecommunications sector, CRC utilizes the STOXX Europe TMI stock index (STOXX)[105] as a benchmark. This index provides a comprehensive measure of the European stock market performance, making it an appropriate benchmark for evaluating systemic risk.

The CRC, along with data published by BEREC, estimates the beta coefficients and the respective levels of financial indebtedness of 15 companies within a defined "partner group." The beta coefficients are derived from stock price data collected on a weekly basis, which is compared against the performance of the STOXX index. This data is sourced from the Bloomberg database, ensuring high standards of accuracy and reliability in the financial metrics used.

[105] STOXX Europe TMI covers approximately 95% of the free movement of European market capitalisation in 17 European countries: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

The values for the beta coefficient and the financial indebtedness ratio are computed as averages over a recent five-year period, from April 1, 2018, to April 1, 2023. These averages are based on weekly values to capture a more nuanced and dynamic understanding of market movements and company performance.

When integrating these values into financial models, the CRC considers the average beta values of all 15 companies within the peer group. For the purposes of determining the WACC, a beta value of **0.64**[106] is utilized. This figure reflects a relatively moderate level of market risk, indicating that the returns on the operator's equity are less volatile than those of a higher beta stock. The use of this beta value is instrumental in calculating the cost of equity, thereby influencing investment decisions and regulatory assessments within the telecommunications industry.

Equity Risk Premium (ERP)

The Equity Risk Premium (ERP) is a critical financial metric that quantifies the additional return investors require for choosing equity over a risk-free asset. This premium compensates investors for the extra risk they undertake when investing in the volatile capital market compared to risk-free investments like government bonds. Understanding and accurately calculating ERP is essential for investment valuation, particularly in environments where risk and return calculations dictate significant financial decisions and regulatory frameworks.

ERP reflects broader economic conditions and is indicative of the market's overall risk appetite. It integrates expectations of future market volatility and the potential for higher returns, which are inherent in equity investments. In simpler terms, ERP represents the price of taking on additional risks associated with the equity market.

The European Commission (EC) advocates for the calculation of a standardized ERP for the entire European Union, leveraging historical data to reflect the integrated nature of EU financial markets. This approach assumes a convergence in the risk premiums across member states, supported by empirical evidence suggesting that financial markets within the EU are increasingly interconnected.

To compute this unified ERP, BEREC (Body of European Regulators for Electronic Communications) utilizes comprehensive datasets including the so-called DMS[107] database, which provides global returns from 1900 to 2022 for 14 EU member states. For member states not covered in this dataset, BEREC supplements with data sourced from Bloomberg, ensuring a comprehensive coverage and robustness in the ERP values calculated.

According to BEREC's findings published in the WACC Parameters Report 2023, the CRC initially considers an average European equity risk premium of 5.92%. However, this average

[106] BoR (23) 90, page 37 https://www.berec.europa.eu/en/document-categories/berec/reports/berec-report-on-wacc-parameter-calculations-according-to-the-european-commissions-wacc-notice-of-6th-november-2019-wacc-parameters-report-2023

[107] Dimson/Marsh/Staunton (DMS) data published in Credit Suisse's Global Investment Return on 2023 Yearbook by Credit Suisse/London Business School

does not necessarily cater to the specific economic environment or equity market conditions within individual countries, such as Bulgaria.

Recognizing the need for precision in regulatory financial models, BEREC also provides country-specific ERP values. For Bulgaria, a significantly higher ERP of **12.23%**[108] is noted, reflecting unique market conditions, possibly including higher market volatility or economic risk factors specific to the region.

Integrating these insights, the CRC employs the CAPM to calculate the cost of equity (Re). This model incorporates the risk-free rate of return (RFR), the beta coefficient (β), which measures the stock's volatility relative to the market, and the specific ERP for Bulgaria using the provided figures.

Based on the calculated values for risk-free rate of return of 1.23%, equity risk premium of 12.23% and beta ratio of 0.64, using the previously mentioned CAPM model, the cost of equity (Re) is derived at **9.06%.** This calculated cost of equity provides a robust estimate that reflects both the general and specific investment risks in Bulgaria. This value is crucial for determining the attractiveness of investments in the telecommunications sector and for setting rates that ensure fair returns on equity while maintaining market stability and investor confidence.

Gearing Factor (Financial Leverage)

The gearing ratio, a fundamental metric in corporate finance, measures the proportion of a company's capital financed through debt. It is expressed as the ratio of a company's debt to the total capital (debt plus equity). Mathematically, this is represented by the formula:

G = D / (D + E)

Where:

- **D** represents the total debt,
- **E** signifies the total equity.

This ratio is crucial in assessing the financial leverage of a company, indicating how much of the company's operations are funded by debt versus equity.

The gearing ratio serves as a weighting factor that reflects the relative costs of debt and equity in financing the company's assets. In calculating WACC, the gearing ratio helps determine the optimal capital structure, which is the balance between the cost-effective use of debt (with its tax shields) and equity (which carries no tax advantage but dilutes the risk).

The determination of the actual amounts of debt and equity can vary based on the approach in use:

- Carrying Amounts: Often sourced from annual financial statements, carrying amounts provide a defensible basis for assessing the amount of borrowed capital. However, this

[108] BoR (23) 90, page 54 https://www.berec.europa.eu/en/document-categories/berec/reports/berec-report-on-wacc-parameter-calculations-according-to-the-european-commissions-wacc-notice-of-6th-november-2019-wacc-parameters-report-2023

method can significantly underestimate the market value of equity, especially in volatile markets or for companies with substantial intangible assets.

- Market Values: Some regulators prefer to use real market data to assess levels of financial leverage. Most method involves calculating the market capitalization for equity and the market-adjusted values for debt, which tends to provide a more dynamic and market-reflective measure of the company's financial leverage.

Regulatory Approaches and International Practices

Different regulatory bodies may apply various methodologies to estimate the gearing ratio and, consequently, the WACC:

- Expert Assessments: Some authorities use expert assessments to determine effective levels of financial leverage, adjusting for perceived market conditions or operational nuances.
- BEREC Benchmark Approach: Consistent with Decision 550/2016, the CRC adopts the BEREC benchmark approach. This methodology involves comparing financial leverage ratios across a group of comparable companies and aligning with ratios used by other regulatory authorities to ensure compliance with international best practices.

Calculation Based on European Market Data

For a robust assessment of indebtedness ratios, data on capital structures over a recent five-year period is utilized:

- Data Source: BEREC calculates these ratios using Bloomberg data, which includes information on long-term debt and market capitalization from April 1, 2018, to April 1, 2023.
- Arithmetic Mean: The average values of financial indebtedness are computed for each company in the comparable group, and an overall arithmetic mean is derived.

Based on this comprehensive analysis, the CRC adopts an average financial indebtedness ratio of **45.36%** as calculated by BEREC. This figure plays a pivotal role in determining the optimal capital structure for electronic communications operators and impacts the WACC calculations, influencing investment decisions and regulatory pricing models within the telecommunications industry.

Marginal Corporate Tax (t)

In the context of WACC, the incorporation of the marginal corporate tax rate is essential because it impacts the after-tax cost of debt. Debt financing provides tax benefits because interest expenses are deductible before determining the taxable profit, thereby reducing the overall tax liability. This reduction in tax enhances the appeal of debt financing over equity, as equity does not offer similar tax shields.

When regulators calculate the WACC, they initially determine the pre-tax cost of capital. This involves summing the costs of debt and equity financing, weighted by their respective proportions in the company's capital structure. To adjust for the tax shield provided by debt financing, the pre-tax cost of debt is multiplied by (1-t), where t is the marginal tax rate. This

adjustment reflects the tax savings due to interest deductibility and thus lowers the effective cost of debt.

C urrently, the marginal corporate tax rate in Bulgaria is set at 10%. The application of this relatively low tax rate means that the tax shield effect on debt is less pronounced than it might be in higher-tax jurisdictions, but it still represents a significant factor in financial modeling and WACC calculations. The use of the marginal rate, rather than an effective tax rate, ensures consistent and fair treatment across different enterprises, promoting equity and simplicity in regulatory approaches.

By integrating these financial principles and the specific tax considerations, regulatory authorities like the CRC can more accurately and fairly determine the WACC, ensuring that enterprises in the telecommunications sector are able to generate sufficient revenue to cover their cost of capital and maintain healthy profitability after taxes.

Resulting WACC and Reasonable Profit

In its latest evaluation, the CRC has utilized a comprehensive set of financial parameters to calculate the pre-tax WACC. Initially, a WACC of 4.41% was derived using standard parameters. However, after refining the equity risk premium (ERP) to reflect more localized data specific to Bulgaria, rather than using a broader EU-average, the revised WACC value was determined to be slightly higher at **6.97%.**

This adjustment acknowledges the specific financial environment in Bulgaria, including factors such as market volatility, economic conditions, and investor expectations specific to the region. By utilizing a country-specific ERP, we should be confident that the calculated WACC more accurately reflects the true cost of capital for companies operating within Bulgaria.

Encouraging Efficient Management and Reasonable Profit

To enhance operational efficiency and financial management among companies receiving financial aid, the Bulgarian authorities proposes not only to allow these companies to earn a return equal to the calculated WACC but also to provide an additional incentive. This incentive is [capped at 70%] of the calculated reasonable profit, which is determined based on the WACC. For the current calculation in terms of the financial aid, this reasonable profit level is set at **11.85%.**

This policy is designed to motivate beneficiaries of financial aid to optimize their operations and manage their costs effectively. By tying financial incentives to exceeding baseline financial performance measures, companies are encouraged to pursue efficiency improvements and strategic enhancements that contribute to their long-term financial sustainability.

Implementation and Impact

The implementation of this WACC and the associated reasonable profit incentive structure play a pivotal role in the regulatory framework overseen by the CRC. By setting a WACC that accurately reflects the cost of capital and offering incentives for exceeding this

baseline, the Bulgarian authorities aims to foster a competitive, efficient and healthy financial aid for the telecommunications sector in Bulgaria.

This approach not only ensures that companies can attract the necessary capital to fund their operations and expansions but also aligns their interests with those of their investors and the broader economic goals of the region. The result is a balanced regulatory environment that supports both growth and stability in the telecommunications industry.

The measure is designed to provide open access to the subsidised network on equal and non-discriminatory terms to the benefit of all access seekers, thereby favouring competition between operators. The deployment of a high-quality wholesale-only infrastructure will have a pro-competitive impact. The new subsidised infrastructure will bring additional capacity and speed to the market in the target areas. This, in turn, is expected to stimulate market entry by service providers and may ultimately lead to lower prices and better choice for consumers, with services offering higher quality with an innovative character for these areas.

Wholesale access prices, as also described above, will be based on the pricing principles set by NRAs in the face of CRC. Benchmarking will be used as a tool to ensure that the aid granted will serve to replicate market conditions such as those prevailing in other competitive broadband markets. Prices will be based on average published wholesale prices for comparable services in more competitive areas of Bulgaria or the European Union. In case these are not available, pricing will follow the principles of cost orientation and the method prescribed by the regulatory framework for the sector. Wholesale network access prices will also take into account State aid granted to the network operator. The prices and conditions offered by the selected infrastructure operator will be monitored by the CRC in its role as regulator.

In relation to the fulfilment of specific monitoring obligations, the measure will be regularly monitored by the granting authority- the MTC, the implementing body and the NRA. Monitoring will be carried out throughout the duration of the measure.

The NRA (CRC) will monitor prices as well as the conditions under which wholesale services will be provided. CRC will also apply a dispute resolution mechanism in potential conflicts between selected operators and persons seeking access to the subsidised network.

As described above in the text, a claw-back mechanism is foreseen for the aid measure. In this respect, the costs expected to be reimbursed under the project are not subject to funding from any other project, programme or scheme financed by public funds, funds from the national and/or EC budgets. A ‘claw-back’ mechanism is envisaged through which the beneficiary will ensure that the funds received from the provision of the infrastructure built under the project are linked to the costs of operation and use by the operators. The beneficiary will conclude a corresponding contract with the selected network operators to compensate for the accumulated profit, if any, is realised in the operation of the constructed infrastructure.

(ii) Please confirm that, if the number of participants to the competitive selection procedure or the number of eligible bids is not sufficient, an

independent auditor will be entrusted with the assessment of the winning bid (including cost calculations)[109].

The MTC will fulfil the responsibilities of a State aid administrator and will organise a procedure with separate lots for each area through the selection of proposals for the implementation of the investment (either through selection or through direct award to final recipients). The aid administrator may provide funds from the Recovery and Resilience Facility directly to specific final recipients designated for the implementation of an investment in the Recovery and Resilience Plan or in another document approved by a decision of the Council of Ministers of the Republic of Bulgaria or by a decision of the Minister, or to applicants who have received a high score "above the thresholds" by the European Commission but have not received European funding.

The administrator monitors the implementation of activities by final recipients, checks financial and technical reports (FTRs) and ensures that there is no double funding of expenditure from the RRF and other sources, conflicts of interest, corruption and fraud; carry out on-the-spot checks; perform ex-ante and ex-post control of public procurements for the selection of subcontractors; monitor progress in the implementation of the investment, including milestones and targets in accordance with the schedule in the financing contract; activities to address deficiencies and shortcomings identified by on-the-spot checks or by audit and control bodies, as well as the results of the control activities carried out, the risks identified and the actions taken to address them; enter information into the Facility Information System, including in cases of suspected fraud, conflict of interest, corruption or double funding; establish a fraud risk assessment organisation to identify and implement effective and proportionate anti-fraud measures within the monitored investment(s); check the analytical accounts provided by the final recipients for all expenditure and payments made under the investment, for the resulting receivables and payables, and for the comparability of the financial information to be included in the financial and technical report.

The MTC will decide on the granting of the aid after verifying that the potential beneficiary fulfils the conditions and requirements laid down in the call for tenders and in accordance with the EC State aid decision.

The aid shall be proportionate and limited to the minimum amount necessary, subject to an open, transparent and non-discriminatory competitive selection procedure with a separate lot for each region of the country, in accordance with the principles of publicity, transparency, objectivity, equality and non-discrimination and in a way that is capable of attracting a sufficient number of participants to ensure an appropriate degree of competition, an effective result and the most economically advantageous offer. The division into 6 regions in the country determines the conduct of 1 procedure with 6 separate lots, and interested operators have the right to submit tenders for one and/or more lots, as well as for all regions. Aid may not be awarded to more than one beneficiary in each region.

The entities awarded for the deployment of infrastructure within the designated target areas will be recognised as the beneficiaries of the financial aid. These undertakings are

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109 Paragraph 118.

entrusted with a crucial role in advancing the regional digital infrastructure and are subject to specific obligations and conditions to ensure the broad and equitable dissemination of the aid's benefits.

For each area won, the operator receives an aid budget that will allow it to build, upgrade, lease capacity and wholesale VHCN in order to achieve the expected speed criteria, associated settlements, coverage of the specific population in the area concerned with the relevant technology and the expected economic benefits.

Obligations of the Aid Beneficiaries

• Provision of Access to Passive Infrastructure: Beneficiaries are required to provide other operators with unrestricted access to the passive infrastructure they deploy. This access should be granted indefinitely from the date the infrastructure is completed. The intention behind this stipulation is to maximize the utility of the funded infrastructure by enabling a wider range of service providers to deliver telecommunications services, thereby enhancing competitive market conditions.

• Conditions for Infrastructure Access: Access to this infrastructure must be provided under conditions that are transparent, fair, and non-discriminatory. This framework ensures that all potential users have an equal opportunity to utilize the infrastructure, fostering an inclusive market environment. Consequently, access seekers indirectly benefit from the financial aid as they can avail themselves of wholesale access services without direct participation in the funding initiative.

• Operational Duration Requirement: Beneficiaries are mandated to operate the financed infrastructure for a minimum duration of [twenty years] following the project's completion. This long-term operational commitment ensures the sustained availability and maintenance of the infrastructure, thereby securing ongoing benefits from the initial investment.

• Continuity of Access Obligations: The obligations to provide access to the infrastructure remain binding regardless of any changes in the ownership, management, or operational control of the infrastructure. This condition guarantees that the infrastructure continues to serve its intended public and economic benefit, irrespective of corporate restructuring or ownership transfers.

Minimum requirements will be defined in the documentation for the selection of the contractor. The tender of the selected participant must comply with these minimum requirements, including the technical specifications and performance requirements set out in the Terms of Reference. A successful bid should offer an optimal value for money compared to other bidders. Each lot for a given area will be awarded to a contractor offering the most economically advantageous tender, taking into account both the price and the predefined technical and qualitative criteria. This will help to minimise the State aid involved. For eligible expenditures exceeding EUR 50,000 for works and EUR 20,000 for other contracts, it is essential that the beneficiary requests at least three offers from different suppliers before signing contracts. The selection should be based on criteria of efficiency and economy. The economic report of the supporting account must explicitly justify the choice of supplier, particularly when

the selected offer is not the most economically advantageous. This practice promotes competitive bidding and cost-effectiveness in procurement.

The beneficiary may, in the course of implementation, request adjustments to prices and contract terms offered by the contractor to third parties which do not comply with this contract and the requirements for the granting of State aid and the EU Guidelines for the application of State aid rules in relation to the rapid deployment of broadband networks, including on the basis of complaints and signals from local commercial companies using or wishing to use the built infrastructure.

Participant in the procedure can be any Bulgarian or foreign natural or legal person or their associations, as well as any other entity entitled to perform works, supply and services under the law of the country in which it is established and holds licences for the right to use radio spectrum in the 26 GHz, 700 MHz and 800 MHz bands. A branch of a foreign person may be an independent participant in the procedure if it can independently submit a tender and conclude a contract under the law of the country in which it is established.

The minimum requirements should also take into account the requirements for the personal situation of the participants and the relevant grounds for exclusion.

The procedure will set requirements for the technical capabilities of the participants. In order to be able to apply, the participant must have carried out activities with subject and volume identical or similar to those of the procedure for a maximum of the last three years from the date of submission of the tender. As a minimum level, it can be assumed that the participants have carried out activities related to the maintenance and/or construction of an electronic communications infrastructure with a length of at least 50 km and/or the provision of digital services. The requirement shall be substantiated by the relevant documents (List of services that are identical or similar to the subject matter of the procedure, indicating the values, dates and recipients, together with proof of the service performed) that the successful tenderer shall submit before the conclusion of the contract.

As part of the tender process, applicants must submit a comprehensive project business plan. This business plan is crucial for the annual verification of overcompensation and must include the following elements:

- The plan should detail all operational costs and investments related to the implementation, deployment, and maintenance of the project.
- It must outline the expected benefits over the lifetime of the subsidized infrastructure, which is set at 20 years. This long-term perspective ensures that the project remains viable and sustainable.
- The plan should specify the aid intensity required, as determined by the aid applicant on an ex ante basis, to cover the planned funding gap. This ensures that the financial aid is appropriately scaled to the needs of the project.

This comprehensive approach not only fosters prudent financial management but also enhances the overall integrity and success of the financial aid program.

As the measure is financed with funds from the RRF, the beneficiaries of the funds, as well as their subcontractors where they have them, will have to comply with the applicable EU and national rules, including the obligations stemming from the RRF Regulation.

In the assessment of the qualitative criteria of the bid, the following criteria will be taken into account:

(a) the number of base station to which backhaul is to be provided covered by the measure;

(b) the number of base station and which can accommodate the highest number of mobile network operators (MNOs);

(c) the degree to which the project intends to reuse exist infrastructure;

(d) the technical solution proposed by the bidders to deploy the Infrastructure;

(e) the quality and detail of the project proposal.

In planning the construction of infrastructure, operators must take into account all existing infrastructure in the intervention areas concerned that can be reused. In addition, the re-use of existing infrastructures to reduce the costs of the measure will be considered as an advantage to participate in the procedure.

Tenderers are encouraged to provide further enhanced wholesale access conditions as part of their bid in the competitive selection procedure. Wholesale offers, including conditions and prices, will be assessed in the competitive selection procedure. If necessary, the MTC will consult CRC to verify whether the wholesale offer complies with the requirements and benchmarks (e.g. for access products for which there are no similar regulated products).

Access prices for the subsidised elements or part of them will be based on the pricing principles established by the CRC or on the wholesale prices it has set for the same or similar services. In the absence of an equivalent reference offer, the benchmark will be the average domestic prices and, if there is no such reference value, the cost-orientation criterion will be applied, taking into account the aid received for the provision of optical fibre network.

The beneficiary must publish and update on its website the information on wholesale network access for each of the wholesale services included in the measure, for both passive and active elements, on available capacity and on prices, and must communicate the relevant reference offers and internet link to the CRC publication.

All beneficiaries will ensure accounting separation between the costs and revenues related to the deployment of the infrastructure and all other activities.

The CRC is the body that will resolve disputes between the operators requesting access and the operators benefiting from the aid.

Given the technical complexity of the task and the likelihood of presenting a variety of technological solutions due to the requirement of technological neutrality, the technical proposal of the participants will be of great importance for the overall assessment.

The beneficiaries of the aid will be the operators entrusted with the implementation of the lot they have won for the deployment of infrastructure in the areas concerned. The beneficiaries

must operate the infrastructure for at least 20 years from the end of the aided measure. The beneficiaries of the aid will grant other operators wholesale access to the infrastructure (the active elements and the passive part) for a period of at least 20 years from the date of completion of the infrastructure. Access must be granted under transparent, fair and non-discriminatory conditions. Thus, access seekers will also indirectly benefit from the measure through the provision of wholesale access services.

Aid beneficiaries must provide passive and active wholesale access to the network to access seekers on a transparent, fair and non-discriminatory basis. The network must be constructed in such a way that no further works are subsequently required up to the point of delivery of the base station traffic.

The mandatory access to be provided by beneficiaries shall include: access to passive infrastructure, including access to ducts (deployment of ducts of sufficient size), access to dark fibres (sufficient number of dark fibres) and at least one active wholesale service. Effective active wholesale access must be granted for a period of at least 20 years. Effective passive wholesale access must be available for the entire life cycle of the infrastructure concerned from the date of completion of the project.

The beneficiary must submit its annual balance of revenue and expenditure derived from the subsidized infrastructure. This submission allows for annual verification of any potential overcompensation. This verification process will be carried out for 20 years from the project's completion.

During the tender process, bidders should be required to present a detailed financial plan. This plan must outline the projected investments and the ongoing operational costs necessary for the infrastructure's deployment and maintenance.

The financial plan should also project the expected profits over at least a twenty-year period following the project's completion. It needs to specify the aid intensity required to bridge the expected funding gap, ensuring that the financial aid is justified and aligns with long-term sustainability objectives.

(iii) Please confirm that the tender will be awarded on the basis of the most economically advantageous offer[110] and provide details in this regard.

The successful proposal of the applicants in the procedure should offer an optimal ratio between quality and price offered compared to that of the other participants. Each lot for a given area will be awarded to a contractor offering the most economically advantageous tender, taking into account both the price and the predefined technical and qualitative criteria. This will help to minimise the State aid involved.

[110] Paragraph 120.

(iv) Please indicate the objective, transparent and non-discriminatory award criteria and specify the relative weighting of each criterion[111].

The MTC will ensure that the winner of each lot of the procedure is the most economically advantageous solution by establishing objective, transparent and non-discriminatory qualitative award criteria and pre-determining the relative weighting of each criterion.

(c) If no, please confirm that the State intervention is implemented through a direct investment model and provide adequate justification of the choice of network and of the technological solution adopted[112].

.....

(d) Please confirm that any concession or other entrustment by a public authority or in-house entity to a third party to design, build or operate the subsidised network is allocated through an open, transparent and non-discriminatory competitive selection procedure, in line with the principles of public procurement, based on the most economically advantageous offer[113]. Please provide details in this regard.

The measure is designed in such a way as to minimise the State aid involved and any distortion of competition. The aid shall be proportionate and limited to the minimum amount necessary, subject to an open, transparent and non-discriminatory competitive selection procedure with a separate lot for each region of the country in accordance with the principles of publicity, transparency, objectivity, equality and non-discrimination and in a way that is capable of attracting a sufficient number of participants to ensure an appropriate degree of competition, an efficient outcome and the most economically advantageous offer. The division into 6 regions in the country determines the conduct of 1 procedure with 6 separate lots, and interested operators have the right to submit tenders for one and/or more lots, as well as for all regions. Aid may not be awarded to more than one beneficiary in each region.

8.2. Technological neutrality. Please explain if and how the aid measure complies with the principle of technological neutrality[114].

Beneficiaries will be selected on the basis of objective criteria in line with the principle of technological neutrality. Backhaul networks carry traffic on typically more than one fixed and/or mobile access network. In order to adequately cover the objectives of the aid measure, backhaul networks need to cope with the upgrading of access networks with increasing needs for improved data transmission and increased productivity. The measure aims at building a more efficient backhaul network connecting eligible base stations so as to avoid that the backhaul network becomes an obstacle to the development of efficient mobile networks,

111 Paragraphs 120-122.
112 Paragraph 123.
113 Paragraph 124.
114 Paragraph 125.

including 5G networks, which need improved performance in terms of capacity, speed, latency and reliability. A market failure occurs when the current or planned backhaul network cannot cope with the expected development of the relevant mobile access network. In this regard, the only solution to achieve the objectives of the Measure are fiber-based solutions.

Beneficiaries must commit to offer effective wholesale access to all access seekers, and regardless of the technology chosen by the access seekers, under open, transparent, fair and non-discriminatory conditions.

As there is virtually unlimited capacity, imposing an open wholesale access obligation is feasible at the maximum level. In order to promote competitive broadband provision in the identified areas, the chosen approach provides the best conditions to allow private operators to access the developed infrastructure.

VHCNs are an investment in future services based on such access. In addition, with this technology, providers using the infrastructure will in the future be able to provide speed and capacity to deliver high-quality digital services at affordable prices. The network as a whole will have the potential to contribute to the improvement of all aspects of digital technologies and digital services.

From a regulatory point of view, this scenario creates the best conditions for the development of the digital services market and does not violate market regulation guidelines and is in line with the Broadband Guidelines.

8.3. Use of existing infrastructure. Please provide the following information:

(a) Whether and, if so, how undertakings willing to participate in a competitive selection procedure are encouraged to use available existing infrastructures to deploy the subsidised networks[115].

In planning the construction of infrastructure, operators must take into account all existing infrastructure in the intervention areas concerned that can be reused. In addition, the re-use of existing infrastructures to reduce the costs of the measure will be considered an advantage when assessing the participants in the procedure.

(b) Whether and, if so, how undertakings willing to participate in a competitive selection procedure are encouraged to provide detailed information on the existing infrastructures that they own or control in the planned intervention area in due time to be taken into account when preparing the bids, specifying the type of information requested[116].

In order to be considered eligible for the competitive selection procedure, any operator owning or controlling existing infrastructure in the target areas must be obliged to provide all relevant information, including prices for access to the existing infrastructure, to the granting

115 Paragraph 127.
116 Paragraph 127.

authority and to the other participants in the procedure at a given time, which would allow the latter to include this infrastructure in their tender and to commit to offer fair and non-discriminatory access to their existing infrastructure.

(c) Whether the provision of that information is a condition for participation in the selection procedure[117].

☒ Yes ☐ No

(d) Whether and, if so, how all available information on existing infrastructure that could be used for rolling out broadband networks in the intervention areas are made accessible, specifying whether a Single Information Point has been set up pursuant to Article 4(2) of Directive 2014/61/EU[118].

The country has a well-functioning Single Information Point (SIP) from which information on existing physical infrastructure in intervention areas could be drawn. The point is available at: https://sipbg.gov.bg/SIP.Experts/

8.4. Wholesale access for third parties to the subsidised networks.

(a) General information.

(i) Please confirm that wholesale access will be granted as early as possible before starting to provide the relevant services and, where the network operator also intends to provide retail services, at least 6 months before the launch of those retail services[119].

The details of the wholesale access offer will be available to interested operators at least six months before the start of the commercial operation of the network by the beneficiary.

We confirm that wholesale access will be granted as early as possible before starting to provide the relevant services. Additionally, where the network operator also intends to provide retail services, wholesale access will be granted to begin simultaneously with the launch of those retail services.

(ii) Please confirm that the subsidised networks will offer access under fair and non-discriminatory conditions, specifying whether this implies the upgrade and/or increase of the capacity of existing infrastructure, where necessary, and the deployment of sufficient new infrastructure[120]. Please provide details in this regard.

We confirm that the subsidized networks will offer access under fair and non-discriminatory conditions. This commitment includes, where necessary, the upgrade and/or increase of the capacity of existing infrastructure to ensure adequate service. Additionally,

117 Paragraph 127.
118 Paragraph 128.
119 Paragraph 129.
120 Paragraph 130.

where existing infrastructure is insufficient, sufficient new infrastructure will be deployed to meet the required service standards. Detailed planning and assessments will be conducted to determine the specific areas where upgrades or new deployments are needed to guarantee fair access for all third-party users.

(iii) Please confirm that the terms, conditions and prices for the wholesale access products will be indicated in the documents of the competitive selection procedure and on a comprehensive website, at national or regional level, accessible to the general public without any restrictions (specifying the relevant web address)[121].

The terms, conditions, and prices for the wholesale access products will be outlined in the documents of the competitive selection procedure and published on a comprehensive website, accessible to the general public without restrictions. The relevant web address will be related to the website of the Ministry of Transport and Communications.

(iv) Please confirm that wholesale access will also be granted to parts of the network that have not been State funded or that may not have been deployed by the aid beneficiary if necessary to render the wholesale access effective and to enable access seekers to provide their services[122].

Wholesale access will also be granted to parts of the network which are not State-funded or which may not have been deployed by the aid beneficiary, if this is necessary to make wholesale access effective and to enable access seekers to provide their services. However, this will only be possible for parts of the network with sufficient capacity to support such access. The scope of this access will be determined based on the specific requirements needed to facilitate fair and comprehensive service provision. A greater choice of wholesale access products will increase the beneficiaries' revenues, thus likely increasing profitability and thus reducing the amount of aid needed to close the funding gap.

(b) Wholesale access terms and conditions.

(i) Please indicate for how many years effective wholesale access will be granted to:

☐ Active products (except VULA)[123] ……..

☐ VULA[124]……

☒ Newinfrastructures - indefinitely

Provision of Access to Passive Infrastructure: Beneficiaries are required to provide other operators with unrestricted access to the passive infrastructure they deploy. This access should be granted indefinitely from the date the infrastructure is completed. The intention behind this stipulation is to maximize the utility of the funded infrastructure by enabling a wider range of

121 Paragraph 131.
122 Paragraph 132.
123 Paragraph 133.
124 Paragraph 134.

service providers to deliver telecommunications services, thereby enhancing competitive market conditions.

Conditions for Infrastructure Access: Access to this infrastructure must be provided under conditions that are transparent, fair, and non-discriminatory. This framework ensures that all potential users have an equal opportunity to utilize the infrastructure, fostering an inclusive market environment. Consequently, access seekers indirectly benefit from the financial aid as they can avail themselves of wholesale access services without direct participation in the funding initiative.

Operational Duration Requirement: Beneficiaries are mandated to operate the financed infrastructure for a minimum duration of 20 years following the project's completion. This long-term operational commitment ensures the sustained availability and maintenance of the infrastructure, thereby securing ongoing benefits from the initial investment.

Continuity of Access Obligations: The obligations to provide access to the infrastructure remain binding regardless of any changes in the ownership, management, or operational control of the infrastructure. This condition guarantees that the infrastructure continues to serve its intended public and economic benefit, irrespective of corporate restructuring or ownership transfers.

(ii) Please confirm that, if State aid is granted for new infrastructure, the infrastructure will be large enough to meet access seekers' current and evolving demand[125].

☒ Yes ☐ No

(iii) Please explain how the new infrastructure will be able to meet access seekers' current and evolving demand (e.g., size of the ducts, number of fibres, etc.).

The subsidised network will have the following technical characteristics:

New construction

2 HDPE pipes and one 96 FO cable with G.652 fibers. The subsidized network availability will be ~99,5% on the yearly level with SLA target up to 8 hours. The free HDPE pipe will be used to deploy additional fiber infrastructure by commercial operators.

In line with paragraph 113 of the Broadband Guidelines the financed backhaul network will be dimensioned in a way that it can support the needs of the future access networks to be deployed.

24 fibers will be reserved for the state network; 24 fibers will be reserved for the beneficiary of the targeted area; 2x24 fibers will be available for other operators.

[125] Paragraph 135.

In accordance with the technological neutrality principle the most suitable technologies are to be selected, additionally taking into account the characteristics and needs of the targeted areas.

Upgrade of existing networks

Whenever possible the potential beneficiaries will be obliged to use existing networks, either by laying cable in the existing empty pipes in line with milestone C7.R3: Creating a favourable investment environment or by using the capacity of the upgraded of copper networks or significantly older fiber, which is already not fully performant (Irrevocable Right of Use for the lifetime of the project). In order to avoid the subsidized backhaul network to become a bottleneck, the capacity of the existing networks and physical infrastructure will be significantly increased in order to accompany the deployment of performant new networks (paragraph 68 of the Broadband Guidelines).

The deployed cable will be 96 FO cable with G.652 fibers and the conditions of completely new deployment stated above will apply.

At the same time, such increase will not constitute unreasonable duplication of the existing networks and adjacent infrastructure because the measure will be implemented by number of means, such as: re-use of existing free ducts; copper networks switch-off; deployment of brand new VHCNs, including in the areas with existing 24-fibre based networks, which are completely used, etc.

Reuse of existing networks

In order to guarantee Strategic Objective 1: Comprehensive Enhancement of the Unified Electronic Communication Network, the chosen beneficiaries will have to guarantee at least 2 fibers for the State network, which will be supported through existing networks via. Irrevocable Right of Use for the lifetime of the project.

In all three hypothesis the beneficiary will be obliged to provide maintenance and support for the state network free of charge for the next 20 years.

The subsidised networks under the State intervention represent a significant investment in backhaul infrastructure and therefore are „step change“ in the meaning of paragraph 19(p) and paragraph 112 of the Broadband Guidelines. The subsided networks will be a significant improvement which are going to bring substantial new investments in the broadband networks and significant new capabilities to the market in terms of broadband services availability, capacity and speed.

The State-funded backhaul network will be based on fibre solutions and additionally the capacity of the network will be dimensioned appropriately taking into account the specific situation in the target areas.

In all three hypothesis the beneficiary will be obliged to provide maintenance and support for the state network free of charge for the next 20 years.

(iv) Please confirm that the same access conditions apply to the entire subsidised network, including the parts of the network where existing infrastructure has been used[126].

☒ Yes ☐ No

(v) Please confirm that the access obligations will be enforced irrespective of any change in ownership, management or operation of the subsidised network[127].

☒ Yes ☐ No

(vi) The obligations to provide access to the infrastructure remain binding regardless of any changes in the ownership, management, or operational control of the infrastructure. This condition guarantees that the infrastructure continues to serve its intended public and economic benefit, irrespective of corporate restructuring or ownership transfers.Please explain whether the aid beneficiary and/or access seekers linked to the aid beneficiary are permitted to extend their networks into adjacent areas outside the target area using their own resources[128].

☒ Yes ☐ No

If yes, please confirm that:

- In the public consultation it was indicated that private extensions were permitted at a later stage and useful information regarding the potential coverage of such extensions was provided[129].

  ☒ Yes ☐ No

- The results of the public consultation do not show evidence of risks of significant distortions of competition[130].

  ☒ Yes ☐ No

- Please confirm that extensions into adjacent areas may only be carried out 2 years after the subsidised network enters into operation, where one of the following situations occurs[131]:

  - in the public consultation, stakeholders demonstrate that the planned extension would risk entering an adjacent area

126 Paragraph 137.
127 Paragraph 137.
128 Paragraph 138.
129 Paragraph 138(a).
130 Paragraph 139.
131 Paragraph 138(b).

which is already served by at least two independent networks providing speeds comparable to those of the State-funded network; or

- ○ there is at least one network in the adjacent area providing speeds comparable to those of the subsidised network which entered into operation less than 5 years before the subsidised network enters into operation[132].

☒ Yes ☐ No

.....

(c) Wholesale access products.

(i) Fixed access networks deployed in white areas. Please list the wholesale access products that the subsidised network must provide, taking into account that it must provide at least bitstream access, access to dark fibre and access to infrastructure (including street cabinets, poles, masts, towers, and ducts)[133] and, in addition, at least physical unbundling or VULA[134].

.....

(ii) Fixed access networks deployed in grey and black areas. Please list the wholesale access products that the subsidised network must provide, taking into account that it must provide at least bitstream access, access to dark fibre and access to infrastructure (including street cabinets, poles, masts, towers, and ducts) and, in addition, physical unbundling[135]. If your authorities intend to grant a derogation from the obligation to provide physical unbundling, please provide relevant justifications, demonstrate that the derogation does not risk unduly distorting competition and indicate the comments received in this regard in the public consultation (and how they were addressed)[136].

.....

(iii) Mobile access networks. Please list the wholesale access products that the subsidised network must provide, taking into account that it must provide at least roaming[137] and access to poles, masts, towers and ducts. Moreover, please confirm that the subsidised network will have to provide the access products necessary to exploit the more advanced

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132 Paragraph 138(b)(ii).
133 Paragraph 140.
134 Paragraph 141.
135 Paragraph 142.
136 Paragraph 143.
137 Paragraph 144. See also footnote 91.

features (*e.g.*, MORAN, MOCN, network slicing[138]) of mobile networks, such as 5G and future generations of mobile networks, as soon as they become available[139].

.....

(iv) Backhaul networks. Please list the wholesale access products that the subsidised network must provide, taking into account that it must provide at least one active service and access to poles, masts, towers, ducts and dark fibre[140]. Moreover, please confirm that the aid measure foresees the deployment of sufficient capacity for new infrastructure to ensure effective access under fair and non-discriminatory conditions[141].

The State-funded network will provide at least bitstream access, access to dark fibre and access to infrastructure, including street cabinets, poles, masts, towers, and ducts. The State-funded network will provide at least either physical unbundling or VULA. To be considered suitable as a wholesale access product, any VULA product must be approved in advance by the competent authority. The Ministry of Transport and Communications as funding body will require the details on products to be provided as part of the selection procedure.

The subsidised networks under the State intervention represent a significant investment in backhaul infrastructure and therefore are „step change" in the meaning of paragraph 19(p) and paragraph 112 of the Broadband Guidelines. The subsided networks will be a significant improvement which are going to bring substantial new investments in the broadband networks and significant new capabilities to the market in terms of broadband services availability, capacity and speed.

(v) The State-funded backhaul network will be based on fibre solutions and additionally the capacity of the network will be dimensioned appropriately taking into account the specific situation in the target areas.Wholesale access on the basis of reasonable demand. Should your authorities intend to limit the provision of certain wholesale access products to cases of reasonable demand from an access seeker, please:

- provide well-reasoned, objective and verifiable data and arguments (including cost calculations) proving that the provision of such products would disproportionately increase investment costs without delivering significant benefits in terms of increased competition[142].
- confirm that the access seeker's demand is considered reasonable if the access seeker provides a business plan that justifies the development of the product on the subsidised network and no

138 Footnote 97.
139 Paragraph 144. See also footnote 98.
140 Paragraph 145.
141 Paragraph 146.
142 Paragraph 147-148.

comparable access product is already offered in the same geographic area by another undertaking at equivalent prices to those in more densely populated areas[143].

☐ Yes ☐ No

- confirm that, if an access request is considered reasonable, the additional cost of meeting the access request must be borne by the aid beneficiary[144].

☐ Yes ☐ No

Not applicable

(d) Wholesale access pricing. Please indicate on which of the following benchmarks and pricing principles the wholesale access price for each product is based:

☒ average published wholesale prices that prevail in other comparable and more competitive areas of the Member State[145].

☐ regulated prices already set or approved by the National Regulatory Authority (NRA) for the markets and services concerned[146].

☐ costs orientation or a methodology mandated in accordance with the sectoral regulatory framework[147].

In the intricate process of setting access prices for passive (physical) infrastructure, specifically the underground duct network, CRC adheres to a sophisticated financial methodology dictated by European standards. This involves calculating the WACC, a critical financial metric used to ensure that pricing models are economically viable and reflective of the prevailing market conditions. The CRC's approach to determining WACC values is aligned with the European Commission's Notice on WACC dated 6 November 2019, and leverages the comprehensive guidelines set forth in BEREC's fourth report published in June 2023, the "WACC Parameters Report 2023"148 (WACC Parameters Report 2023).

8.5. Clawback. Please indicate whether a claw-back mechanism will be applied to the aid measure:

☒ Yes[149] ☐ No

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143 Paragraph 149.
144 Paragraph 150.
145 Paragraph 151(a).
146 Paragraph 151(b).
147 Paragraph 151(c).
148 BoR (23) 90, of 8 June 2023, https://www.berec.europa.eu/en/document-categories/berec/reports/berec-report-on-wacc-parameter-calculations-according-to-the-european-commissions-wacc-notice-of-6th-november-2019-wacc-parameters-report-2023
149 Paragraph 155, according to which a clawback mechanism must be implemented if the aid amount is above EUR 10 million. According to paragraph 156, a clawback mechanism is not necessary in case of adoption of a direct investment model.

If not, please explain why: ……...

If yes, please provide the following information:

(a) Please confirm that the clawback mechanism will be applied for the lifespan of the subsidised network[150].

☒ Yes ☐ No

(b) Please confirm that the rules of the clawback mechanism are set out transparently and clearly in the competitive selection procedure's documentation[151]. Please provide details in this regard.

The use of a claw-back mechanism is envisaged. In this respect, the costs expected to be reimbursed under the project are not subject to funding from any other project, programme or scheme financed by public funds, funds from the national and/or EC budgets.

The claw-back mechanism is a pivotal component in the administration of financial aid allocated for infrastructure development, particularly in sectors like telecommunications. Its primary purpose is to prevent over-compensation of aid beneficiaries, ensuring that both the public sector's interests and those of the investors are safeguarded. This mechanism addresses the inherent risks of estimating financial aid on an ex ante basis, intended to cover the anticipated funding gap over the investment's lifespan.

Financial Planning and Tender Submission

• Financial Plan Submission: During the tender process, bidders should be required to present a detailed financial plan. This plan must outline the projected investments and the ongoing operational costs necessary for the infrastructure's deployment and maintenance.

• Profit Forecasting: The financial plan should also project the expected profits over at least a twenty-year period following the project's completion. It needs to specify the aid intensity required to bridge the expected funding gap, ensuring that the financial aid is justified and aligns with long-term sustainability objectives.

Cost and Efficiency Assessment

• Verification of Projected Costs: After the tender process, Bulgarian authorities review the submitted cost projections to ensure they align with what an efficient operator would likely incur under similar circumstances. This step is crucial for confirming that the financial aid is utilized both efficiently and economically.

• Use of WACC as a Benchmark: The WACC, calculated specifically for this financial aid context, is used as a benchmark to assess the reasonableness of the projected returns. This ensures that the financial parameters used are realistic and grounded in current market conditions.

Implementation of the Claw-back Provision

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150 Paragraph 154.

151 Paragraph 155.

• Recovery of Discrepancies: The claw-back mechanism is actively applied to recover any differences between the projected and actual deployment costs, as well as between the expected and actual profits. This ensures that the aid recipients do not benefit unduly at the expense of the public funds.

• Incentive Structure: Beneficiaries are encouraged to retain a reasonable profit, capped at 70% of this profit as an additional incentive. This is calculated to be 11.85%, promoting operational optimization and effective cost management.

• Profit Sharing: Profits exceeding the set incentive threshold are shared equitably between the aid beneficiary and the Bulgarian authorities, based on the actual aid intensity determined during the tender process.

Ongoing Monitoring and Compliance

• Definition of Reasonable Profit: Reasonable profit is defined as the rate of return on capital that a typical company in the broadband sector would require, considering the specific risks and the nature of the services provided.

• Competitive Pricing: It is essential that pricing remains competitive and does not exceed the average national rates for comparable wholesale services in the telecommunications market.

• Accounting Separation: The aid beneficiary must maintain distinct accounting records for the infrastructure deployment costs and revenues, separate from other business activities. This separation is critical for transparency and effective monitoring.

• Annual Reviews: Bulgarian authorities conduct annual reviews of the profits generated from the infrastructure, beginning from the project's completion and continuing for a minimum of twenty years. Each year, the aid beneficiary is required to submit a detailed financial statement showing the balance of costs and profits derived from the infrastructure operations.

Through these detailed and structured processes, the claw-back mechanism ensures the prudent use of public funds in infrastructure development. It promotes fiscal responsibility and supports the sustainable growth of digital connectivity infrastructure within Bulgaria, aligning with broader economic development goals and ensuring the efficient use of resources.

(c) Please explain how the design of clawback mechanism will consider and balance two objectives, namely the recovery by the Member State of the amounts that exceed a reasonable profit and the safeguard of incentives for undertakings to participate in a competitive selection procedure and to strive for cost efficiencies (efficiency gains) when rolling out the network[152]. In this regard, please specify the criteria adopted to incentivise efficiency gains.

The financial mechanism uses the Weighted Average Cost of Capital (WACC) calculated to determine reasonable profit margins. The calculated pre-tax WACC is adjusted to 6.97%, reflecting a refined approach to local economic conditions and the specific risks inherent in the

[152] Paragraph 157.

Bulgarian market. This WACC supports a reasonable profit level set at 11.85%, fostering an environment that encourages efficient operation and cost management.

The body responsible for monitoring the aid will periodically review the conditions for granting the aid based on the data reported by the beneficiary. If it is found that the forecasted revenue or expenditure results in overcompensation, the beneficiary must either repay the excess amount or reinvest the additional profits into further network expansions under the same conditions as the original aid.

(d) Please indicate the maximum incentive amount (in percentage of the reasonable profit allowed[153]). Moreover, please specify the notion of reasonable profit applied for the purposes of the clawback mechanism[154].

In the context of providing financial aid for infrastructure deployment within the telecommunications sector, the determination of reasonable profit is essential to ensure balanced economic incentives and safeguard the sustainability of investments. The Bulgarian Communications Regulation Commission (CRC) employs sophisticated financial models, specifically the Weighted Average Cost of Capital (WACC) and the Capital Asset Pricing Model (CAPM), as foundational frameworks to derive reasonable returns on assets within cost models. These models are critical when setting prices for access to and use of channel networks, particularly in the market for access to passive (physical) infrastructure.

The WACC is universally recognized for its effectiveness in calculating the cost of capital for businesses, particularly in regulatory environments where entities are mandated to apply cost-oriented pricing strategies. This approach facilitates the establishment of fair and economically justified price ceilings for services, ensuring that providers can cover their capital costs while maintaining reasonable profit margins. This method is not only recommended but also widely implemented by the European Commission and various regulatory bodies across Europe, underscoring its reliability and relevance.

In alignment with the European Commission's directives, the CRC adopts the methodologies outlined in the EC Notice for its regulatory practices. The CRC further refines its approach by integrating data from BEREC's WACC Parameters Report 2023, which offers the latest insights and parameters essential for the accurate determination of WACC. This meticulous approach ensures that the parameters used are reflective of current economic conditions and industry standards, thereby enhancing the accuracy and relevance of the cost models employed.

Through the careful application of these sophisticated financial and regulatory models, the CRC endeavors to support the development of a robust telecommunications infrastructure in Bulgaria. This approach not only aligns with European standards but also promotes fair competition and stimulates continued investment in the nation's digital infrastructure, pivotal for advancing Bulgaria's position within the Digital Single Market.

153 Paragraph 158.
154 footnote (104).

In its latest evaluation, the CRC has utilized a comprehensive set of financial parameters to calculate the pre-tax WACC. Initially, a WACC of 4.41% was derived using standard parameters. However, after refining the equity risk premium (ERP) to reflect more localized data specific to Bulgaria, rather than using a broader EU-average, the revised WACC value was determined to be slightly higher at 6.97%.

This adjustment acknowledges the specific financial environment in Bulgaria, including factors such as market volatility, economic conditions, and investor expectations specific to the region. By utilizing a country-specific ERP, we should be confident that the calculated WACC more accurately reflects the true cost of capital for companies operating within Bulgaria.

(e) Please confirm that any extra profit equal or below the threshold below (*i.e.*, the reasonable profit increased by the incentive amount) will not be clawed-back by the Member State, whereas any profit in excess of the threshold will be shared between the aid beneficiary and the Member State, on the basis of the aid intensity resulting from the outcome of the competitive selection procedure[155]. Please provide details in this regard.

To enhance operational efficiency and financial management among companies receiving financial aid, the Bulgarian authorities proposes not only to allow these companies to earn a return equal to the calculated WACC but also to provide an additional incentive. This incentive is [capped at 70%] of the calculated reasonable profit, which is determined based on the WACC. For the current calculation in terms of the financial aid, the reasonable profit including the additional incentive level are calculated at total of 11.85%.

This policy is designed to motivate beneficiaries of financial aid to optimize their operations and manage their costs effectively. By tying financial incentives to exceeding baseline financial performance measures, companies are encouraged to pursue efficiency improvements and strategic enhancements that contribute to their long-term financial sustainability.

The implementation of this WACC and the associated reasonable profit incentive structure play a pivotal role in the regulatory framework overseen by the CRC. By setting a WACC that accurately reflects the cost of capital and offering incentives for exceeding this baseline, the Bulgarian authorities aims to foster a competitive, efficient and healthy financial aid for the telecommunications sector in Bulgaria.

This approach not only ensures that companies can attract the necessary capital to fund their operations and expansions but also aligns their interests with those of their investors and the broader economic goals of the region. The result is a balanced regulatory environment that supports both growth and stability in the telecommunications industry.

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155 Paragraph 158.

(f) Please confirm that the clawback mechanism takes into account also profits made from other transactions concerning the subsidised network[156].

☒ Yes ☐ No

8.6. Accounting separation. Please confirm that the aid beneficiary must ensure accounting separation so that the costs for deployment and operation, as well as the revenues from the exploitation of the subsidised network are clearly identified[157].

☒ Yes ☐ No

In order to ensure that the aid granted under the measure remains proportionate and does not lead to overcompensation or cross-subsidisation of non-assisted activities, all beneficiaries must ensure accounting separation between the costs and revenues related to the deployment of the infrastructures and all other activities.

The beneficiary's accounting records must accurately reflect the revenue and expenditure related to the supported activity, including the payment of such expenditure. It is crucial to verify that these records are properly maintained and consistent with the financial transactions of the project.

Beneficiaries must maintain detailed accounts that clearly identify the expenditure subject to the grant. This involves using differentiated accounts or sub-accounts to allow for adequate control of all transactions related to the subsidized project. Such detailed accounting ensures transparency and facilitates easier auditing and verification processes.

By adhering to these detailed justification and verification measures, Bulgarian authorities can ensure that the deployment of digital infrastructure is conducted efficiently, transparently, and in a manner that supports long-term sustainability and competitive fairness in the broadband sector.

Reasonable profit is defined as the rate of return on capital that a typical company in the broadband sector would require, considering specific risks and the nature of the services provided. This rate is calculated using the Weighted Average Cost of Capital (WACC), ensuring that the profit margins are fair and reflective of market conditions.

It is essential that pricing for broadband services remains competitive and does not exceed average national rates for comparable wholesale services in the telecommunications market. This prevents monopolistic practices and ensures affordability for consumers.

156 Paragraph 159.
157 Paragraph 160.

9. Role of the national authorities

9.1. Please explain the role played by the NRA in the design, implementation and monitoring of the aid measure[158]. *Inter alia*, please clarify whether it was involved on:

☒ Mapping exercise[159]. If so, please provide details:

The Communications Regulation Commission (CRC) is a specialized independent regulatory body that implements sector policy in the field of electronic communications and postal services. In conditions of equality and transparency, in accordance with Bulgarian and European legislation, the Commission strives to promote competition in the country's communications markets. The National Regulatory Authority (NRA) works to: increase investment in the communications sector, develop new technologies and protect consumers in Bulgaria.

The Commission:

1. performs regulation and control functions in the implementation of electronic communications under the Electronic Communications Act and postal services under the Postal Services Act;

2. is a supervisory authority under the Electronic Document and Electronic Authentication Services Act and Regulation (EU) No. 910/2014 on electronic identification and authentication services in electronic transactions on the internal market;

3. is a dispute authority under the Electronic Communications Networks and Physical Infrastructure Act and a control authority under the same law regarding access to physical infrastructure, including access to physical infrastructure in buildings;

4. carries out the functions of a national regulatory authority under Regulation (EU) No. 531/2012 on roaming in public mobile communication networks within the Union, under Implementing Regulation (EU) 2016/2286 for determining detailed rules regarding the implementation of a policy for fair usage and on the methodology for assessing the sustainability of the removal of retail roaming surcharges, as well as on the application that is submitted by the roaming provider for the purposes of this assessment and under Regulation (EU) 2015/2120 on determining measures on access to open internet and retail prices for regulated communications within the EU.

Within its powers, the CRC:

1. defines the relevant markets of electronic communication networks and/or services subject to regulation under the Electronic Communications Act;

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158 Paragraph 5.2.4.6.

159 Paragraph 77. See also paragraph 162.

2. studies, analyzes and prepares an assessment regarding the level of competition in the relevant markets of electronic communication networks and/or services;

3. determines enterprises that have a significant impact on the relevant market of electronic communications;

4. imposes, continues, amends or cancels specific obligations of enterprises, defined as enterprises with a significant impact on the market, to achieve the goals of the Electronic Communications Act;

5. exceptionally imposes justified and proportionate temporary specific obligations in the cases provided for in the Electronic Communications Act;

6. entrusts the provision of universal service.

Regarding the role of the NRA in relation to the identification of target areas, determination of wholesale prices, including through benchmarking, dispute resolution, etc., the National Regulatory Authority, the Communications Regulatory Commission (CRC), in the performance of its regulatory functions and on the basis of Art. 40, para. 1 of the Electronic Communications Act, collects and summarizes information necessary for clearly defined statistical needs and for the analysis and assessment of the development of competition in the markets of electronic communications networks and/or services, application of pricing principles and prospects of the development of the relevant market. Pursuant to Art. 40, para. 3 of the Electronic Communications Act, CRC after a motivated written request from the Ministry of Transport and Communications (MTC) provides the collected information for the needs of state policy and planning. In this regard and with a view to identifying the target areas of the project, MTC requested and CRC provided detailed information collected with the annual questionnaires and with the broadband access questionnaire from the enterprises providing data transfer services and/or Internet access.

The mapping and analysis of the communication connectivity and broadband coverage in the country were carried out using a web GIS application using data from the Single Information Point (SIP), the Communications Regulation Commission (CRC) and the telecommunication operators to determine which geographic areas will be covered by the State aid measure under the project.

☐ Assessment of private investment plans[160]. If so, please provide details:

.....

☒ Public consultation[161]. If so, please provide details:

[160] Paragraph 90.

[161] Paragraph 83. See also paragraph 162.

The National Regulatory Authority – CRC issued a positive opinion through an official letter on the implementation of the investment "Large-scale deployment of digital infrastructure on the territory of Bulgaria" of the National Recovery and Resilience Plan.

☐ Assessment of the fulfilment of the step change requirements[162]. If so, please provide details:

.....

☐ Definition of wholesale access products, conditions and pricing[163]. If so, please provide details:

The Commission has the power to impose price restrictions after a market analysis, when there is a lack of effective competition in the relevant market and the presence of an undertaking with a significant impact. Based on identified competitive concerns, the CRC may impose price restrictions on access services, including prices determined on the basis of benchmarking. The CRC does not have the authority to consider disputes between the operator of the subsidized infrastructure and the enterprises seeking access, because such authority is not provided for in the relevant national legislation.

In its opinion, the CRC expressed the opinion that the investment initiative planned by the MTC concerns wholesale electronic communications services, which are defined and analysed by the regulator in the definition, analysis and assessment of the relevant markets for electronic communications networks and/or services, in the exercise of its functions and powers provided for in the provisions of the Electronic Communications Act. These are:

1. The wholesale market for local access at a fixed location (market 1 of the 2020 Relevant Markets Recommendation (market 3a of the 2014 Relevant Markets Recommendation));
2. The market for wholesale central access at a fixed location (market 3b of the 2014 Relevant Markets Recommendation); and
3. The market for wholesale access to passive (physical) infrastructure (not included in the list of relevant markets in the Recommendation on relevant markets).

☒ Resolution of disputes related to wholesale access[164]. If so, please provide details:

Regarding the role of the NRA in relation to the identification of target areas, determination of wholesale prices, including through benchmarking, dispute resolution, etc., the National Regulatory Authority, the Communications Regulatory Commission (CRC), in the performance of its regulatory functions and on the basis of Art. 40, para. 1 of the Electronic Communications Act (ECA), collects and summarizes information necessary for clearly defined statistical needs and for the analysis and assessment of the development of competition in the markets of electronic communications networks and/or services, application of pricing principles and prospects of the development of the relevant market. Pursuant to Art. 40, para. 3

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162 Paragraph 162.
163 Paragraphs 136 and 152. See also paragraph 163.
164 Paragraph 162.

of the ECA, CRC after a motivated written request from the Ministry of Transport and Communications provides the collected information for the needs of state policy and planning. In this regard, and with a view to identifying the target areas of the project, MTC requested, and CRC provided, detailed information collected with the annual questionnaires and with the broadband access questionnaire from the enterprises providing data transfer services and/or Internet access.

The Commission has the power to impose price restrictions after a market analysis, when there is a lack of effective competition in the relevant market and the presence of an undertaking with a significant impact. Based on identified competitive concerns, the CRC may impose price restrictions on access services, including prices determined on the basis of benchmarking. The CRC does not have the authority to consider disputes between the operator of the subsidized infrastructure and the enterprises seeking access, because such authority is not provided for in the ECA.

Although the CRC does not have the authority to directly regulate the conditions for granting access to established networks, the Commission may provide assistance for the purpose of mediation in determining wholesale access prices applicable to providers of electronic communications services.

In the event that during the construction of the network, additional capacity is provided in the infrastructure in which the network is located (ducts, pipes, shafts, masts, etc.), the conditions for access to the physical infrastructure may be the subject of a dispute, which is considered by the CRC pursuant to the Law on Electronic Communications Networks and Physical Infrastructure".

☒ Existing infrastructures subject to *ex ante* regulation[165]. If so, please provide details:

In the 2007-2013 programming period, under the Operational Programme 'Regional Development', the project 'Development of high-speed broadband access in Bulgaria through the construction of critical, protected, secure and reliable public ICT infrastructure' was implemented by the Executive Agency for Electronic Communications Networks and Information Systems (predecessor of the State e-Government Agency (SEGA). The project provided a secure and reliable next generation broadband infrastructure for the needs of e-government and created prerequisites for the development of broadband services for citizens and businesses in economically backward and remote areas of the country. The public ICT infrastructure built under the project was provided under the Public Procurement Act (PPA) to a private operator, which has an obligation to maintain the infrastructure and provide access against fair, transparent conditions to any interested operator who would like to use this infrastructure to provide services with better parameters to its customers. In order to preserve competition in the affected areas, the network support company is not allowed to provide retail services.

For the programming period 2014-2020, BGN 60 million were allocated under the Rural Development Programme for connection to the Unified Electronic Communication Network

165 Paragraph 163.

(UECN) of the public administration of the municipal centres that fall within the so-called 'white or grey areas', in accordance with the 'Community Guidelines for the application of State aid rules in relation to the rapid deployment of broadband networks' (the Broadband Guidelines). According to the approved conditions for application, the deadline for submission of project proposals was 4 October 2019 and the SEGA was designated as the only eligible candidate under the procedure. The project was aimed at ensuring the connectivity of a maximum number of municipal centers to the state backbone network for the improvement, presentation and use of electronic services for citizens and businesses. The grant under the announced procedure was subject to notification to the European Commission under Article 108(3) of the Treaty on the Functioning of the European Union. Priority building of passive broadband infrastructure and deployment of broadband access measures in sparsely populated and rural areas is of utmost importance to improve coverage in settlements located in peripheral, sparsely populated and rural areas. The project activities aimed at incentivising the deployment of new and upgrades of existing networks to ensure access to infrastructure providing ultra-high speeds and the use of secure digital technologies as a key enabler of the digital transformation.

The construction of ultra-fast broadband infrastructure under sub-measure 7.3. 'Broadband infrastructure, including its creation, improvement and expansion, passive broadband infrastructure and measures for access to broadband infrastructure and e-government solutions' aimed to support the deployment of high-speed broadband networks capable of guaranteeing broadband speeds of at least 100 Mbps, with the possibility of upgrading to 1 Gbps in 'white areas' in rural areas in Bulgaria. The intervention should have entered 59 strictly defined municipalities meeting the criteria of the Broadband Guidelines.

Under the sub-measure, activities for the construction of new fibre-optic cable lines for the extension of an already established public broadband network for data transmission and internet access services were to be carried out. The aid was concentrated on providing high-speed access in so-called 'white areas', where there is currently no performance network in place. These "white zones" represented 59 municipal territories with their settlements. The scheme should have built a critical, secure, safe and reliable public infrastructure as a prerequisite for ensuring a high quality of life and new opportunities for economic and social development of the targeted areas.

☒ Definition of the clawback mechanism. If so, please provide details:

The claw-back mechanism is a pivotal component in the administration of financial aid allocated for infrastructure development, particularly in sectors like telecommunications. Its primary purpose is to prevent over-compensation of aid beneficiaries, ensuring that both the public sector's interests and those of the investors are safeguarded. This mechanism addresses the inherent risks of estimating financial aid on an ex ante basis, intended to cover the anticipated funding gap over the investment's lifespan.

Rates of absorption are crucial to understanding the efficiency of financial aid deployment. The analysis suggests that adherence to project timelines, efficiency of grant utilization, and the capacity of beneficiaries significantly influence the absorption rate.

Effective project management and regulatory efficiency are vital for maintaining the momentum of fund utilization.

The use of a claw-back mechanism is envisaged. In this respect, the costs expected to be reimbursed under the project are not subject to funding from any other project, programme or scheme financed by public funds, funds from the national and/or EC budgets. A 'claw-back' mechanism is envisaged through which the beneficiary will ensure that the funds received from the provision of the infrastructure built under the project are linked to the costs of operation and use by the operators. A claw-back mechanism is designed to prevent over-compensation and ensure that the financial aid benefits the infrastructure development as intended. This mechanism involves rigorous monitoring and annual reviews to adjust any discrepancies between projected and actual costs or profits, thus ensuring fiscal responsibility and the effective use of public funds.

9.2. Please provide the opinion of the NRA on the aid measure[166] (if available).

In accordance with the requirements of the European Commission, on 28 February 2024 the Ministry of Transport and Communications sent a reasoned request to the national regulatory authority, the Communications Regulation Commission (CRC), concerning the implementation of the investment "Large-scale deployment of digital infrastructure on the territory of Bulgaria" of the National Recovery and Resilience Plan.

On 19 March 2024, the CRC expressed a positive opinion on the information and reasoning provided in relation to the implementation of project of the NRRP.

The consultation was carried out in the light of the regulator's specific experience with wholesale access products and the non-price and pricing conditions under which they are offered on national markets for electronic communications services. In this regard, the guidelines provide that the State-funded network must provide at least:

- for fixed access networks deployed in white areas, bitstream access, access to dark fibre and to infrastructure, including street cabinets, poles, masts, towers and ducts. In addition, ensure unbundling or VULA;
- for fixed access networks deployed in grey and black areas, bitstream access, access to dark fibre and to infrastructure, including street cabinets, poles, masts, towers and ducts and unbundled access;
- for mobile access networks, roaming, as well as access to poles, masts, towers and ducts;
- for backhaul networks, one active service and access to poles, masts, towers, ducts and dark fibre.

The activities of the investment project relate to the construction of broadband infrastructure to municipal centres in compliance with the requirements of the Broadband Guidelines, which include both the construction of new infrastructure and the use of existing

166 Paragraph 163.

passive infrastructure with a view to the downloading of optical fibres. According to the project fiche for Action 1, the construction of ultra-fast connectivity for public institutions in a certain number of places is envisaged. The spare capacity of the built infrastructure will be offered as wholesale access for internet providers to connect their locally built networks to backhaul networks.

CRC recommends considering the deployment of sufficient capacity for new infrastructure (e.g. sufficiently large optical fibre deployment channels to meet the expected needs of all access seekers) if this is necessary to ensure effective access under fair and non-discriminatory conditions.

In the exercise of its powers set out in the Electronic Communications Act (ECA), the CRC constantly monitors the electronic communications market and, if necessary, takes appropriate action to ensure the appropriate competitive conditions on the market.

The investment initiative planned by the MTC concerns wholesale electronic communications services, which are defined and analysed by the regulator in the definition, analysis and assessment of the relevant markets for electronic communications networks and/or services, in the exercise of its functions and powers provided for in the provisions of the LEC. These are:

1. The wholesale market for local access at a fixed location (market 1 of the 2020 Relevant Markets Recommendation (market 3a of the 2014 Relevant Markets Recommendation));

2. The market for wholesale central access at a fixed location (market 3b of the 2014 Relevant Markets Recommendation); and

3. The market for wholesale access to passive (physical) infrastructure (not included in the list of relevant markets in the Recommendation on relevant markets).

With respect to the wholesale market for the provision of local access at a fixed location (Market 1 of the 2020 Relevant Markets Recommendation (Market 3a of the 2014 Relevant Markets Recommendation))

In 2019, by Decision No 235/18.06.2019, the CRC deregulated market 3a/2014 (market 1/2020), taking into account the results of the market analysis, namely that no one or more undertakings were identified that would benefit from the significant market power to a degree of substantial independence from competitors, customers and end-users, in addition to the lack of interest of competitors in the wholesale ‘loop unbundling’ service provided by the incumbent undertaking. In line with recital 165 of the European Electronic Communications Code, national regulatory authorities should at least analyse the markets listed in the Recommendation, including those listed but no longer regulated in the specific national or local context. This review should take place within five years of the previous notification to the EC for the same market. A new market analysis of the market for local access at a fixed location (market 1/2020) is to be carried out this year, which is also set out in the CRC's annual targets for 2024.

With regard to the wholesale market for central access at a fixed location (market 3b of the 2014 Relevant Markets Recommendation)

By Decision No 372/13.08.2015, the CRC deregulated market 3b/2014, proving that there was effective competition on the relevant market, as a result of which it repealed the specific obligations in force. In the current Recommendation on Relevant Markets, this market is not part of the list of markets subject to ex-ante regulation and there are no indications, given specific national circumstances that would imply re-regulatory intervention.

With regard to the market for wholesale access to passive (physical) infrastructure (not included in the list of relevant markets in the Recommendation on relevant markets)

As already stated, by Decision No 235 of 18 June 2019, the CRC defined the market for wholesale local access at a fixed location (market 3a of Recommendation 2014/710/EU) as one with effective competition, and therefore repealed all specific obligations imposed on the undertaking with significant market power - BTC (Vivacom). One of the specific obligations repealed is the accompanying measure for access to passive infrastructure (underground duct network), with a transitional period of 12 months from the publication on the undertaking's website of general conditions under Article 15(2) of the Electronic Communications Networks and Physical Infrastructure Act (ECNPIA) for granting access to and/or sharing of passive infrastructure (underground duct network).

Accordingly, after the end of the transitional period, the symmetrical regulation introduced by the ECNPIA is applicable to all network operators as regards access to and sharing of physical infrastructure in Bulgaria.

CRC supports the planned investment initiative. The CRC believes that the implementation of this investment project will create the necessary prerequisites for development where broadband services for citizens and businesses are not available due to identified "market failures". It will also enable public interest service providers to access broadband internet and/or data traffic at access points in order to provide e-services to citizens and businesses. The CRC believes that this intervention will overcome the serious investment barrier in those areas where there is a lack of market interest, which will incentivize local internet providers to focus their efforts on investment in "last mile" technological solutions, which will allow the provision of quality internet services at affordable prices.

9.3. Please indicate whether the NRA issued guidelines on, among others, carrying out market analysis and definitions of wholesale access products and pricing. If so, please provide the content of the guidelines and clarify whether they take into account the relevant regulatory framework and recommendations issued by the Commission[167].

The NRA has not issued specific guidelines regarding the measure.

9.4. Please provide the opinion of the National Competition Authority on the aid measure[168] (if available).

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167 Paragraph 164.

168 Paragraph 165.

In accordance with the requirements of the European Commission, on 28 February 2024, the Ministry of Transport and Communications sent a reasoned request to the national competition authority, the Commission for Protection of Competition (CPC), concerning the implementation of the investment "Large-scale deployment of digital infrastructure on the territory of Bulgaria" of the National Recovery and Resilience Plan.

On 21 March 2024, by its Decision No 309 the CPC positively commented on the information and reasoning provided in relation to the implementation of project of the NRRP.

The CPC supports the arguments expressed in the request of the MTC that broadband internet access is an essential element of the digital transformation. Non-discriminatory, accessible, safe and efficient internet access must be provided as a service in the public interest in order to enable everyone to participate in economic and public life and that, without high-quality and sustainable digital infrastructure, not only the efficient use of digital services is significantly limited or hampered, but also the use and development of technologies and different innovative solutions and the positive effects of the implementation of the envisaged activities.

With regard to reducing the risk of abuse of a dominant position, the CPC takes the view that the digital infrastructure to be built as a result of the investment initiative would be necessary for the provision of retail internet in the areas concerned and would therefore constitute an essential facility within the meaning of competition law. An essential facility is any type of infrastructure without the use of which the ability to access a certain related market is prevented and therefore the ability to participate in that market and to carry out a certain type of economic activity is prevented. A refusal to grant access to an essential facility or network may constitute an abuse of a dominant position. Other possible abuses of a dominant position relate to the application of different conditions to the same type of contract to different operators or to the imposition of unreasonably high prices. From the point of view of competition law, when analysing whether a price is unreasonably high, it must be borne in mind that, according to the fundamental rulings of the Court of Justice of the European Union (CJEU) on the imposition of unreasonably high prices, General Motors and United Brands, in order not to be unreasonably high, the price must be linked to the economic value of the product or service. The CJEU proposed a comparison between the selling price and the cost of production, also identifying the questions to be answered in such cases – 'whether the difference between the costs actually incurred and the price actually determined is unreasonably high and, if so, whether a price is imposed which is either unfair in itself or when compared with competing products'. Despite the approach proposed in its judgment in United Brands, the CJEU leaves open the possibility of applying other ways of determining whether a price is unreasonably high.

In order to reduce the risk of abuse of a dominant position, the CPC considers it positive that the supported operators of activity 2 will be obliged to manage the established networks as neutral infrastructure and to provide it to other operators under the conditions for wholesale access to physical infrastructure.

Regulated open access for all licensed mobile operators that would have a market interest in providing high-speed mobile coverage would also have a positive effect on the level playing field for market participants in relation to interventions in mobile networks.

State intervention for large-scale deployment of digital infrastructure in Bulgaria could constitute a State aid measure. In this case, the provisions of the Treaty on the Functioning of the European Union (TFEU) on State aid, namely Articles 107 to 109 TFEU, and EU secondary legislation on State aid apply.

Article 107 TFEU lays down a general prohibition on the granting of State aid in any form, specifying the criteria for State aid, namely State aid granted by a Member State or through State resources in any form; favoring certain undertakings or the production of certain goods (economic advantage); selectivity; distortion of competition and effect on trade between Member States. Reference is also made to certain types of aid which are excluded from the general prohibition, such as aid having a social character, aid to make good the damage caused by natural disasters, aid to promote the economic development of certain regions, aid to promote the execution of an important project of common European interest or aid to facilitate the development of certain economic activities, etc. On a proposal from the Commission, other types of aid may be considered compatible with the internal market of the Union by an EU decision.

Under Article 108 TFEU, the powers to monitor State aid are conferred on the European Commission, with an obligation for EU Member States to notify the Commission in advance of any planned granting of State aid. In this regard, it should be noted that the MTC request states that the grant under the announced procedure is subject to notification to the Commission under Article 108(3) TFEU. State aid can only be granted following a Commission decision declaring the aid compatible with the internal market of the Union. In cases where the EC finds incompatibility of planned/granted state aid or the use of approved state aid not for its intended purpose, Member States are obliged to cancel or amend the aid within a time limit set by the EC.

Under Article 7(1) and (2) of the State Aid Act (SAA), the Minister of Finance is the competent national authority responsible for the monitoring, transparency and coordination of State aid and de minimis aid at national, regional and municipal level, excluding aid schemes or individual aid in the field of agriculture and fisheries. The Minister of Finance carries out the monitoring, coordination and interaction with the European Commission and the aid administrators in the field of state aid and de minimis aid; adopts, examines and assesses State aid notifications for completeness, quality and compliance with EU and Bulgarian State aid law; monitors and gives opinions on the granting of new and on the modification of existing State aid for compliance with the State aid policy pursued in the EU and Bulgaria.

The CPC considers that the envisaged obligation for operators to manage the installed networks as neutral infrastructure and to make it available to other operators under the conditions for wholesale access to physical infrastructure, as well as compliance with State aid rules, would create the prerequisites for the planned investment initiative for large-scale deployment of digital infrastructure on the territory of Bulgaria to be implemented in compliance with competition rules.

9.5. Please indicate whether the Broadband Competence Office has been involved in the design of the aid measure[169].

The Bulgarian Broadband Competence Office (BCO), the functions of which are performed by the MTC, is active in all activities related to broadband and digital connectivity. The MTC team organised numerous meetings with stakeholders to define the appropriate scope of the measure and develop the NRRP project initiative.

BCO organised an online discussion on digital connectivity under the Recovery and Resilience Plan, available at: https://www.mtc.government.bg/bg/category/157/doplnitelna-informaciya-sled-provedena-onlayn-diskusiya-v-oblastta-na-cifrovata-svrzanost-po-plana-za-vzstanovyavane-i-ustoychivost-recovery-and-resilience-plan .

In line with the Connectivity Toolbox Recommendations, BCO acts as a broadband coordinator to help coordinate the granting of rights of way and various permits. The BCO Office will improve communication and coordination with all competent authorities involved.

The BCO will develop and make available a set of information materials aimed at municipalities and other competent authorities responsible for granting construction permits, describing the procedures under the legal framework for electronic communications and measures to speed up and facilitate permitting procedures.

In addition, the Ministry of Transport and Communications, in fulfilment of its duties as the Broadband Competence Office (BCO), is organising a public consultation on investment intentions in areas falling within territories where there are no very high capacity networks allowing speeds of 1 Gbps: https://www.mtc.government.bg/bg/category/46/publichna-konsultaciya-otnosno-investicionnite-namereniya-v-oblastta-na-izgrazhdane-i-razvitie-na-mrezhi-s-mnogo-golyam-kapacitet .

10. Transparency, reporting and monitoring of the aid

10.1. Transparency.

(a) Please confirm that your authorities will publish (i) the full text of the decision approving the aid measure and its implementing provisions (or a link to them), and (ii) information on each individual aid award exceeding EUR 100 000, in accordance with Annex II[170] (within 6 months from the date of award of the aid or, for aid in the form of tax advantages, within 1 year from the date that the tax declaration is due)[171],

☐ In the Commission's transparency award module[172].

169 Paragraph 166.
170 Paragraph 202.
171 Paragraph 203.
172 Available at: https://webgate.ec.europa.eu/competition/transparency/public?lang=en.

☒ On a comprehensive State aid website (providing the relevant web address). In this case, please specify whether it is national or regional website[173] and easy access to the information registered in the aid website is allowed (*i.e.*, the general public must be allowed to access the website without restrictions)[174].

Bulgaria ensures that the granting of aid under the measure will be subject to the publicity rules laid down in Article 34(2) of the RRF Regulation and that, for the entire duration of the measure, all transparency requirements will be fulfilled at any stage of its implementation. The relevant infrastructure information will be published on the website of the Ministry of Transport and Communications in its capacity as State aid administrator. On this website, both operators and end-users will have easy access to all relevant acts and information on the measure and its implementation, including the full text of the approved measure; the name and identifier of the aid beneficiaries; the region in which the beneficiary will intervene, etc., the information must remain published for at least ten years from the granting of the aid and be accessible to the general public without restrictions.

(b) Please confirm that the information under point 10.1. will be available for at least 10 years from the date on which the aid was granted, will be published in a non-proprietary spreadsheet data format, which allows data to be effectively searched, extracted, downloaded and easily published on the internet (for instance, in CSV or XML format).

☒ Yes ☐ No

(c) Please confirm that, for aid that is unlawful but subsequently found to be compatible, the relevant information is published on a State aid website (specifying the relevant web address) within 6 months from the date of the Commission's decision declaring the aid compatible[175].

☒ Yes ☐ No

10.2. Reporting. Please confirm that your authorities will submit to the Commission (i) annual reports in respect of each measure approved under the Broadband Guidelines, and (ii) a report every two years containing key information on the aid measure approved under the Broadband Guidelines, in accordance with Annex III to the same Broadband Guidelines[176].

Bulgaria undertakes to submit to the Commission the annual reports required by Article 26 of Council Regulation (EU) 2015/1589.

173 Paragraph 202.
174 Paragraph 204.
175 Paragraph 204.
176 Paragraphs 207-208.

10.3. Monitoring. Please confirm that your authorities will maintain – for 10 years from the date of award of the aid – detailed records regarding all aid measures, which contain all information necessary to establish that all the compatibility conditions set out in the Broadband Guidelines are fulfilled, and that it commits to provide them to the Commission upon request[177].

Bulgaria will monitor the measure on an ongoing basis. The scope of this monitoring will include: the procedure, the deployment of the infrastructure and the fulfilment of all requirements under this Decision for the entire duration of the measure. The MTC will maintain detailed documentation on the measure, which will include all information necessary to establish that all conditions for compatibility of the decision are fulfilled. Bulgaria will keep this documentation for ten years from the date of granting the individual support under the measure and will send it to the Commission, upon request, within 20 working days or such longer period as may be fixed in the request.

The beneficiary must ensure that the originals of the supporting documents are available to control bodies for at least five years from the project's completion, unless a longer period is specified in the award decision. This measure ensures that all financial transactions can be audited and verified if necessary. The beneficiary must submit its annual balance of revenue and expenditure derived from the subsidized infrastructure. This submission allows for annual verification of any potential overcompensation. This verification process will be carried out for 20 years from the project's completion.

11. Negative effects on competition and trade

11.1. Please explain what potential negative effects on competition and trade the aid measure may have (*e.g.*, potential to cause crowding out of private investments[178] or reinforcement of a dominant position) and what elements in the design of the measure could minimize those risks[179].

The objective of the measure is to ensure broadband speeds of at least 1 Gbps in areas where there is currently no high-speed network and where private operators do not plan to invest in such networks at least until the end of 2026. The measure addresses the market failure in the target areas and represents a significant step towards achieving the Digital Decade. This therefore justifies the measure and puts it in line with the general interest.

To mitigate potential negative effects on competition, measures such as transparent and competitive tender processes, clear eligibility criteria, robust claw-back mechanisms, and regular monitoring have been instituted. These measures ensure that financial aid fosters fair competition and prevents over-dependence on state aid.

177 Paragraph 209.
178 As defined at paragraph 19(o).
179 Paragraphs 168-169.

The measure is designed in such a way as to minimise the risk of contraction of private investment and the potential distortion of competition resulting from public intervention. In fact, the measure only supports areas where there is no VHCN and where the investment would not have taken place without public intervention, as confirmed by the mapping exercise and public consultations. In addition, the measure will ensure open access to the subsidised network on equal and non-discriminatory terms to the benefit of all access seekers, thereby favouring competition between operators. The deployment of a high-quality wholesale-only infrastructure will have a pro-competitive impact. The new subsidised infrastructure will bring additional capacity and speed to the market in the target areas. This, in turn, is expected to stimulate market entry by service providers and may ultimately lead to lower prices and better choice for consumers, with services offering higher quality with an innovative character for these areas.

Distortion of competition:

The markets for electronic communications services (including wholesale and broadband retail markets) are open to operators and service providers who are normally engaged in activities that are subject to competition and trade between Member States. Therefore, by providing funding for broadband development in rural areas, the current State aid scheme will not distort competition but create the conditions for market activation by allowing new players to enter, creating the conditions for expansion. The measure will lead to the construction of ultra-fast access infrastructure that would not be available under the available market conditions by supporting the construction of passive and active infrastructure. At the level of network operators, State support may encourage electronic communications network operators to establish or develop their own networks on commercial terms, taking advantage of improved market conditions.

State support may also encourage local businesses to use the services offered through the subsidised network rather than more expensive market solutions. Therefore, the intervention of the State in the present measure will positively change the existing market conditions. To the extent that the intervention may (at least potentially) affect providers of electronic communications services from other Member States, the measure could have a beneficial effect on the demand for and supply of broadband services on the European market, but would not distort competition but stimulate its development. Therefore, State intervention in this measure will affect existing market conditions by allowing the provision of enhanced wholesale broadband services by electronic communications operators and third party providers that would not be available under existing market conditions.

Public contributions through financial instruments can also leverage additional long-term private investment by reducing short-term risks to network deployment in areas where the economic attractiveness can be positive in the long term. It should be borne in mind that the availability of broadband networks is a prerequisite for the emergence of additional services and innovations that are likely to benefit more people than just the immediate investors and subscribers of the network concerned. By combining forms of public funding in areas with common commercial potential for very high capacity networks, grants may be limited to the minimum amount necessary to create economic attractiveness in unprofitable sub-areas, while maximising private sector involvement in wider areas.

We consider that all applicable criteria and requirements of the Guidelines are met and this justifies the need to implement the intervention, which will ensure that distortions of competition and trade between Member States are limited.

Measures have been taken to address the risks of distortion of competition by introducing requirements for the use of a public financing mechanism that least distorts competition and ensures free access to publicly funded infrastructure.

Impact on trade:

To the extent that the State intervention affects providers of electronic communications networks and services from other Member States, the measure has a beneficial effect on trade by increasing demand for and take-up of broadband-based services in locations falling within 'white' areas. Improved broadband infrastructure and additional wholesale capacity will be offered on the free market but will not affect and/or distort competition, which may have a positive effect on trade between Member States. Given that all applicable criteria and requirements of the Guidelines are met, justifying the need to implement the intervention, we believe that it will ensure that distortions of competition and trade between Member States are limited.