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EU4Digital Facility Telecom Rules

Workshop on EU Digital Decade and Digital Infrastructures Regulation in the European Union and the Eastern partner countries

Riga, Latvia
12 November 2025



Funded by
the European Union

Overview of the regional broadband monitoring report

Objective of the report

- 1. Describe the data collection methodology in the Eastern partner countries** (as based on the EU best practices)
- 2. Provide country-specific broadband connectivity profiles**, based on the collected data and other relevant developments, i.e. national broadband development plans and goals, main market & regulatory developments
- 3. Provide regional comparisons between the Eastern partner countries and the EU** (where applicable)
- 4. For 2024 edition**, EU4Digital additionally included a **concise summary of key market and regulatory developments** as well as **additional graphs to reflect regional comparison**

Stakeholders involved

- **EaPeReg – IRB EWG leadership**
- **IRB EWG country representatives & EaP NRAs**
- **European Commission and EU4Digital Facility team**

Developments are reflected in country-specific and regional reports

1. Country-specific broadband profiles, based on the collected data and other relevant developments (e.g., national broadband development plans and goals, main market & regulatory developments)



2. Regional broadband monitoring report, providing overview of country-specific profiles and regional comparisons between the Eastern partner countries and the EU (where applicable)



Country-specific broadband monitoring reports

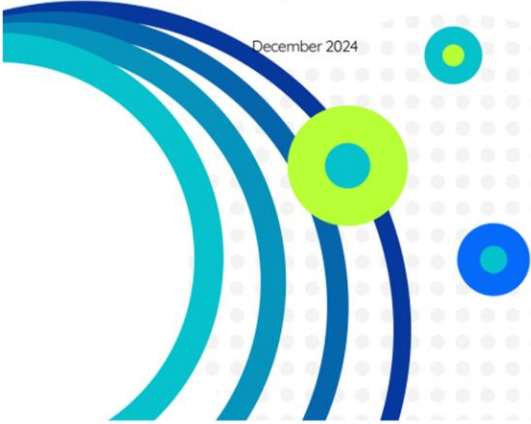
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EU4Digital: supporting digital economy and society in the Eastern Partnership

Broadband access monitoring report

Moldova broadband profile

December 2024



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based on the data collected by EU4Digital Facility during 2021 – 2023

2022	2023	EaP average (2023)	EU average (DESI 2023)
89%	93%	95%	N/A
82%	86%	81%	78%
62%	65%	20%	55%
2%	6%	2%	14%
80%	89%	53%	87%
3%	2%	3%	N/A
0%	0%	2%	68%
81%	89%	85%	N/A

thresholds in Moldova was 93% in 2023, while fixed broadband take-up in 2023, Moldova also reported 65% of at least 100 Mbps fixed broadband take-up by 10%. In comparison, mobile broadband take-up of 30% higher than the EaP average. The same number (89%) of 3 with add-on packages included. Also, compared with the EU average, fixed broadband take-up of speeds exceeding 100 Mbps, the ANRCETI, National Agency for Regulation in Electronic Communications, Moldova's National Regulatory Authority (NRA). Full numerical data is available on the website.

Key goals
The approved Digital transformation strategy of the Republic of Moldova sets the following goals:
- ensure 100% broadband connectivity for every citizen. It aims to ensure 100% broadband connectivity and enable universal Internet accessibility.
- mapping system. The system will equip government with a tool to provide, promote economic development, determine the availability of services in a particular area of the country. As a result, the government and citizens in the country will be enabled to make evidence-based decisions and achieve a seamless digital transformation.
- by "Moldova 2030" was approved in 2020 and set the following goals:
- 100 Mbps connections by 2030;

240 (2022), 969 240 (2023). Data collected by EU4Digital Facility.
103 813 (2022) 2 512 758 (2023). Data collected by EU4Digital Facility.
Information strategy of the republic of moldova for the years 2023-2030.
vizuire_moldova_2024.pdf

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access services is expected to reach 31%;
services shall constitute a percentage of connection, as follows:
- 100 Mbps;
- between 30 Mbps and 100 Mbps;
- in 30 Mbps and 100 Mbps;
- 0 Mbps.
Article 99%:
digital technologies, such as schools, universities, public administrations and businesses, should have access to high-speed Internet.

Map
The map for the Mobile Services Coverage Map, which provides information on the availability of mobile services. It includes information of mobile operators of the Republic of Moldova – Orange Moldova, Moldovabank, including information on signal coverage and locality as well as quality of the mobile service.

Key goals
The development and Digitalisation and ANCRETI initiated by the Republic of Moldova electronic communications regulatory framework aims to align with the EU 2023 decision to open accession negotiations. The electronic communications regulatory framework aims to align with the EU 2023 decision to open accession negotiations.

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Digitalisation of the Republic of Moldova website:
info.md@bnc.gov.md

- **Methodology is based on the DESI Digital Infrastructure dimension**
- DESI methodology is applied in the same manner as in the EU MS, besides **one additional indicator to reflect EaP countries' broadband market structures**
- Country-specific broadband profiles give a **comprehensive overview of broadband developments** in Armenia, Azerbaijan, Georgia and Moldova
- **Besides quantitative indicators, reports also include additional relevant qualitative information**, e.g., national broadband development plans and goals, main market & regulatory developments and other
- **All reports are published and available online at eufordigital.eu**

Overview of country-specific broadband profiles



Armenia broadband profile (1 / 2)

#	Indicator	2021	2022	2023	2024 ¹	EaP average (2024) ²	EU average (DESI 2024) ³
1	Total broadband take-up	53%	78%	79%	83%	114%	N/A
2	Fixed broadband take-up	45%	49%	63%	68%	89%	N/A
3	At least 100 Mbps fixed broadband take-up	0%	5%	19%	21%	39%	72%
4	At least 1 Gbps fixed broadband take-up	N/A	N/A	0%	0%	2%	22%
5	Mobile broadband take-up	55%	75%	77%	80%	67%	90%
6	Mobile broadband data-only take-up	3%	5%	2%	0%	4%	N/A
7	5G spectrum	0%	0%	22%	22%	13%	75%
8	Mobile broadband take-up (EaP)	65%	75%	86%	88%	94%	N/A

¹ Due to on-going alignment on the reported data collection, 2024 data for Armenia is considered preliminary.

² EU4Digital methodology includes both – 4G and 5G – subscriptions for the total broadband calculation to reflect the different stages on 5G availability in the EaP countries, while EU methodology only includes 5G subscriptions. All EaP averages are preliminary and will be finalised upon availability of validated Armenian broadband monitoring data.

³ Data on Total broadband take-up, Mobile broadband data-only take-up, and Mobile broadband take-up (EaP) is not available as DESI does not report the average data for the mentioned indicators. Due to changes in DESI methodology, data on Fixed broadband take-up is available only for 2022; and data on Mobile broadband take-up (DESI) is available only for 2023.



Armenia broadband profile (2 / 2)

Key stakeholders

- **The Ministry of High-Tech Industry of the Republic of Armenia**
- **The Public Services Regulatory Commission (PSRC)**

Legislative framework

- With Decisions No. 92 and No. 93, the PSRC introduced new standards requiring operators to publish detailed information on network access and geographical coverage. **This includes data on the availability of mobile broadband (including 5G) along interstate highways and related quality standards**

Market and regulatory developments

- **Starlink** was licensed in Armenia to expand satellite internet in remote areas.
- **The 3600–3800 MHz band** was harmonised for 5G with a tender planned by the end of 2024.
- **4G+ (LTE Advanced) technology is now available in all 1,002 settlements of Armenia**, ensuring universal baseline coverage. In addition, partial deployment of 5G technology began in 29 urban and 19 rural settlements



Azerbaijan broadband profile (1 / 2)

#	Indicator	2021	2022	2023	2024	EaP average (2024) ¹	EU average (DESI 2024) ²
1	Total broadband take-up	102%	99%	100%	102%	114%	N/A
2	Fixed broadband take-up	95%	90%	92%	93%	89%	N/A
3	At least 100 Mbps fixed broadband take-up	1%	1%	2%	59%	39%	72%
4	At least 1 Gbps fixed broadband take-up	0%	0%	0%	0%	2%	22%
5	Mobile broadband take-up	15%	18%	25%	58%	67%	90%
6	Mobile broadband data-only take-up	1%	2%	2%	2%	4%	N/A
7	5G spectrum	0%	0%	0%	0%	13%	75%
8	Mobile broadband take-up (EaP)	36%	35%	81%	86%	94%	N/A

¹ EU4Digital methodology includes both – 4G and 5G – subscriptions for the total broadband calculation to reflect the different stages on 5G availability in the EaP countries, while EU methodology only includes 5G subscriptions. All EaP averages are preliminary and will be finalised upon availability of validated Armenian broadband monitoring data.

² Data on Total broadband take-up, Mobile broadband data-only take-up, and Mobile broadband take-up (EaP) is not available as DESI does not report the average data for the mentioned indicators. Due to changes in DESI methodology, data on Fixed broadband take-up is available only for 2022; and data on Mobile broadband take-up (DESI) is available only for 2023.



Azerbaijan broadband profile (2 / 2)

Key stakeholders

- The Ministry of Digital Development and Transport
- The Information Communication Technologies Agency (ICTA)

Legislative framework

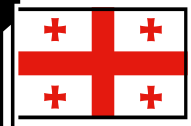
- In process of preparing draft law on electronic communications to be in line with EU legislative framework

Market and regulatory developments

- Established AZCON to unify governance of state-owned telecom and transport enterprises, separating regulatory and operational functions.
- A new Competition Code was adopted in July 2024 to prevent market abuse and ensure fair competition in telecoms.

Investments & broadband facilitation

- Switch over from copper-based DSL to Fibre to the Node (FTTN)
- Construction of fibre-optic network under the framework of Online Azerbaijan project

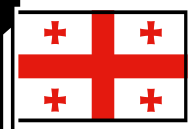


Georgia broadband profile (1 / 2)

#	Indicator	2021	2022	2023	2024	EaP average (2024) ¹	EU average (DESI 2024) ²
1	Total broadband take-up	107%	119%	125%	174%	114% ²	N/A
2	Fixed broadband take-up	89%	95%	98%	102%	89%	N/A
3	At least 100 Mbps fixed broadband take-up	2%	1%	2%	2%	39%	72%
4	At least 1 Gbps fixed broadband take-up	0%	0%	0%	0%	2%	22%
5	Mobile broadband take-up	14% ⁸	28%	27%	30%	67%	90%
6	Mobile broadband data-only take-up	5%	7%	8%	10%	4%	N/A
7	5G spectrum	0%	0%	10%	29%	13%	75%
8	Mobile broadband take-up (EaP)	76%	83%	94%	101%	94%	N/A

¹ EU4Digital methodology includes both – 4G and 5G – subscriptions for the total broadband calculation to reflect the different stages on 5G availability in the EaP countries, while EU methodology only includes 5G subscriptions. All EaP averages are preliminary and will be finalised upon availability of validated Armenian broadband monitoring data.

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Georgia broadband profile (2 / 2)

Key stakeholders

- **Ministry of the Economy and Sustainable Development**
- **Communications Commission**
- **N(N)LE Open Net**, the State Program on Broadband Infrastructure Development

National broadband plan

- **National Broadband Development Strategy 2020 – 2025**
- **Targets include:**
 - 4G coverage
 - 5G piloting
 - Institutional access to 1 Gbps connectivity
 - Households access to >100 Mbps connectivity

Market and regulatory developments

- **ComCom is conducting a pricing study based on year-end 2024 indicators, methodology developed by EC**
- **Law on sharing the telecommunication infrastructure and physical infrastructure applicable for telecommunication purposes** adopted

Investments & broadband facilitation

- **Focus on increasing 5G connectivity** – on-going process for spectrum bands auctions and infrastructure development in multiple regions
- **Starlink satellite internet access** to support the urban-rural divide in connectivity
- **Construction of an optical network** in distant territories



Moldova broadband profile (1 / 2)

#	Indicator	2021	2022	2023	2024	EaP average (2024) ¹	EU average (DESI 2024) ²
1	Total broadband take-up	86%	89%	93%	99%	114% ²	N/A
2	Fixed broadband take-up	79%	82%	86%	92%	89%	N/A
3	At least 100 Mbps fixed broadband take-up	58%	62%	65%	72%	39%	72%
4	At least 1 Gbps fixed broadband take-up	1%	2%	6%	7%	2%	22%
5	Mobile broadband take-up	72%	80%	89%	99%	67%	90%
6	Mobile broadband data-only take-up	3%	3%	2%	3%	4%	N/A
7	5G spectrum	0%	0%	0%	0%	13%	75%
8	Mobile broadband take-up (EaP)	72%	81%	89%	99%	94%	N/A

¹ EU4Digital methodology includes both – 4G and 5G – subscriptions for the total broadband calculation to reflect the different stages on 5G availability in the EaP countries, while EU methodology only includes 5G subscriptions. All EaP averages are preliminary and will be finalised upon availability of validated Armenian broadband monitoring data.

² Data on Total broadband take-up, Mobile broadband data-only take-up, and Mobile broadband take-up (EaP) is not available as DESI does not report the average data for the mentioned indicators. Due to changes in DESI methodology, data on Fixed broadband take-up is available only for 2022; and data on Mobile broadband take-up (DESI) is available only for 2023.



Moldova broadband profile (2 / 2)

Key stakeholders

- **The Ministry of Economic Development and Digitalisation of the Republic of Moldova**
- **ANRCETI** (National Agency for Regulation in Electronic Communications and Information Technology)

National broadband plan

- **Digital transformation strategy for 2023-2030**
 - Fast and affordable Internet access to every citizen
 - Development of broadband coverage mapping system
- **National Development Strategy “Moldova 2030”**
 - Improved internet access and fixed data transfer speed
 - Increased 4G and 5G coverage

Market and regulatory developments

- **Draft of Electronic Communications Law and Law on Regulated Roaming, approximating EU legislative framework, prepared** (and later adopted in 2025)
- **Bilateral roaming track with the EU** – Moldovan citizens already benefit from EU-like roaming prices

Investments & broadband facilitation

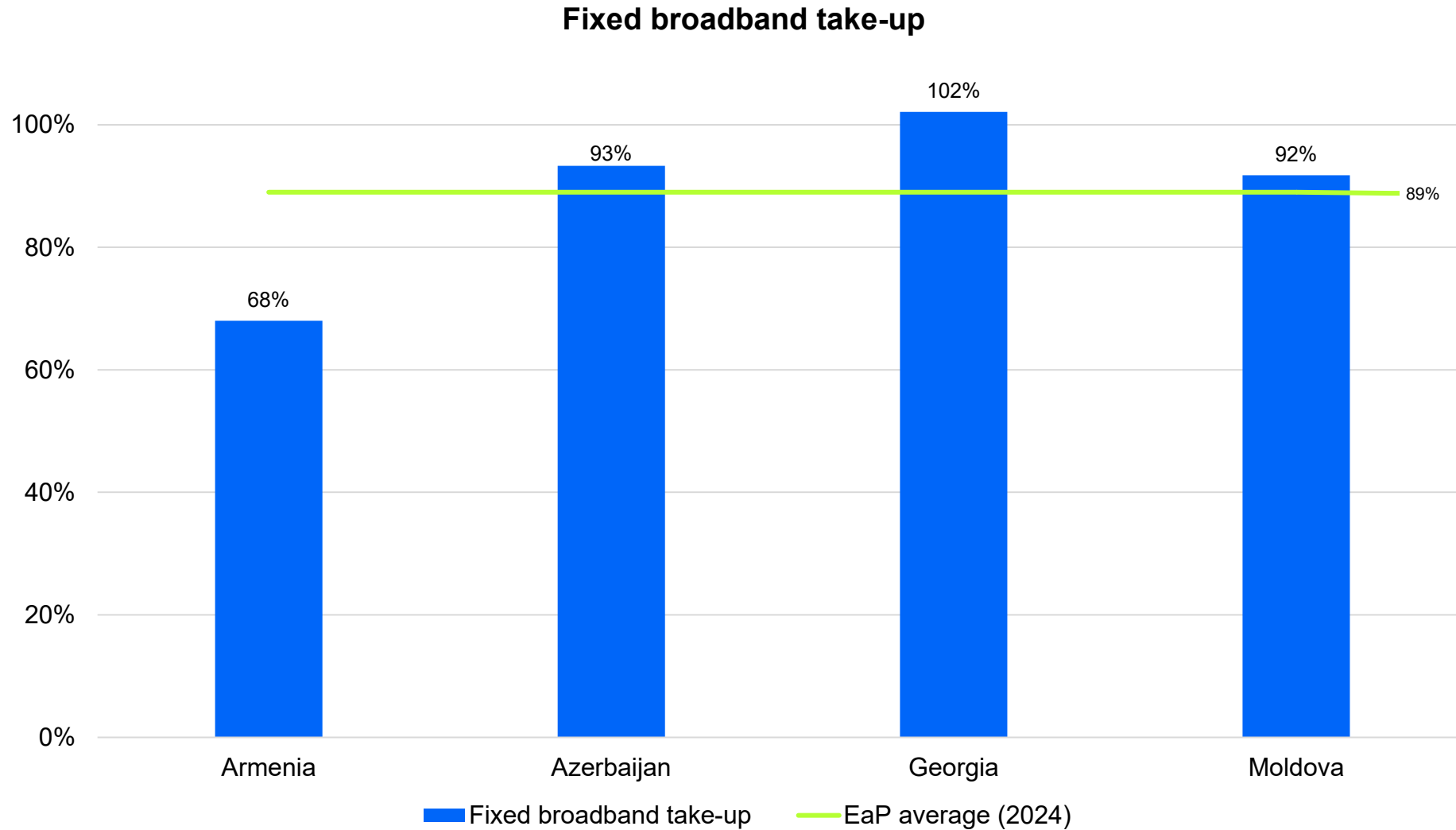
- **Efforts to launch 5G spectrum auctions. ANRCETI approved licensing conditions and launches a public competition on 4 October 2024.**
- **Facilitation of international investor presence**

Summary of key market and regulatory developments by country in 2024

	Key Aspect	Armenia	Azerbaijan	Georgia	Moldova
1	National broadband strategy in place	Draft strategy under review	Yes – Online Azerbaijan	Yes (2020–2025 strategy)	Yes
2	Legislative framework aligned with the EECC	No	No, draft under review	Partially aligned	Yes
3	5G spectrum bands assigned	Process for launching 5G spectrum auctions initiated	Not initiated	5G spectrum auction launched; 29% of spectrum bands assigned	Process for launching 5G spectrum auctions initiated
4	Mobile broadband can substitute fixed broadband	Partially - mobile broadband has a higher penetration percentage, however, limitations remain due to 5G unavailability.	No - fixed broadband remains main type of broadband used as it has a higher penetration percentage than mobile broadband.	Yes - mobile broadband, if data is purchased as an add on package, has similar penetration percentage to fixed broadband. Also, 5G availability supports the potential substitution.	Yes - mobile broadband has a higher penetration percentage than fixed broadband.
5	Key initiatives supporting the switchover to fibre-based solutions	Not specified	Online Azerbaijan – national fibre rollout	Log-in Georgia and Open Net supported by NBDS	Digital Transformation Strategy – universal fibre & gigabit targets

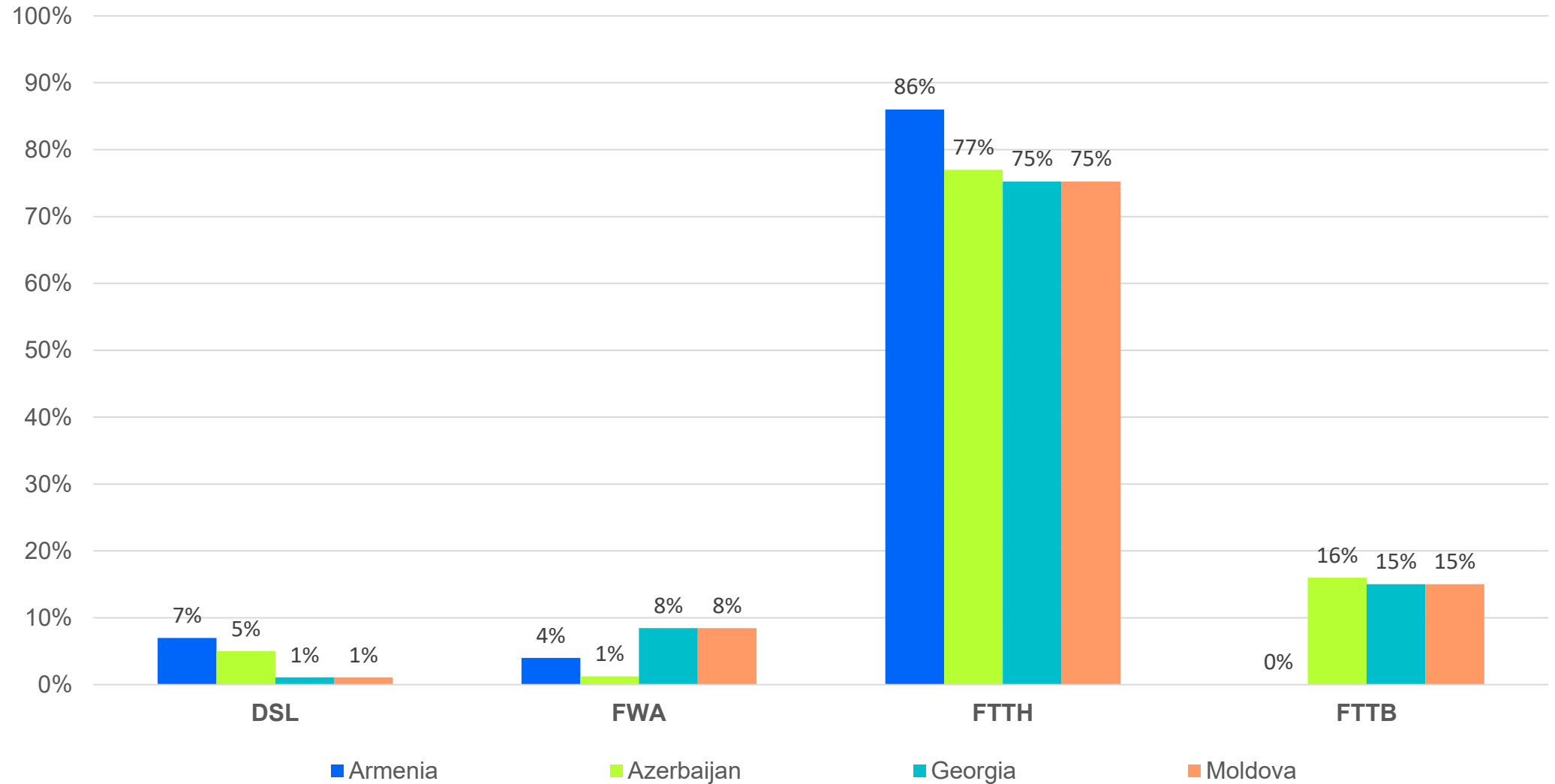
Regional comparison (1 / 4)

Fixed broadband take-up



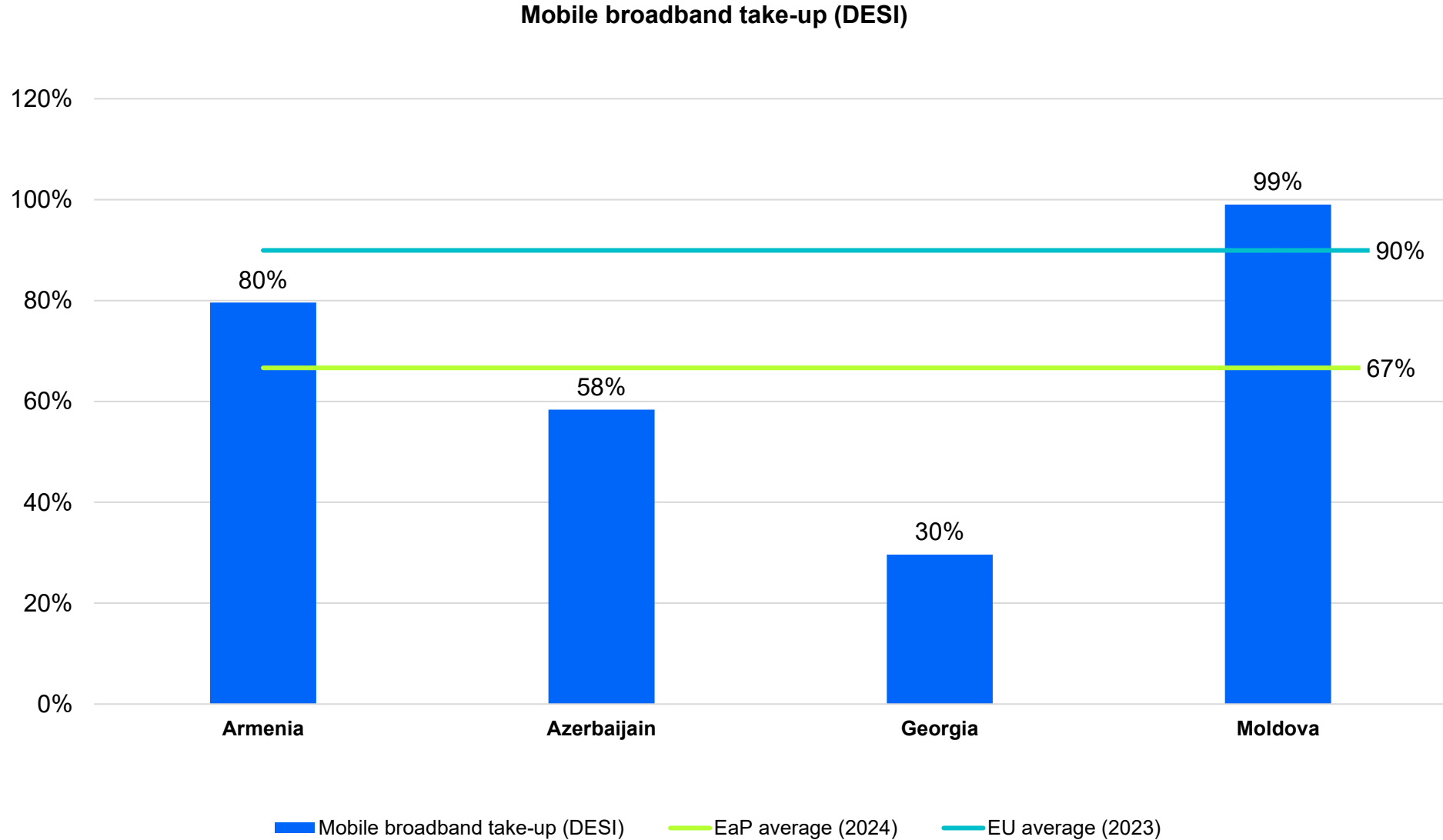
Regional comparison (2 / 4)

Fixed broadband access by technology type



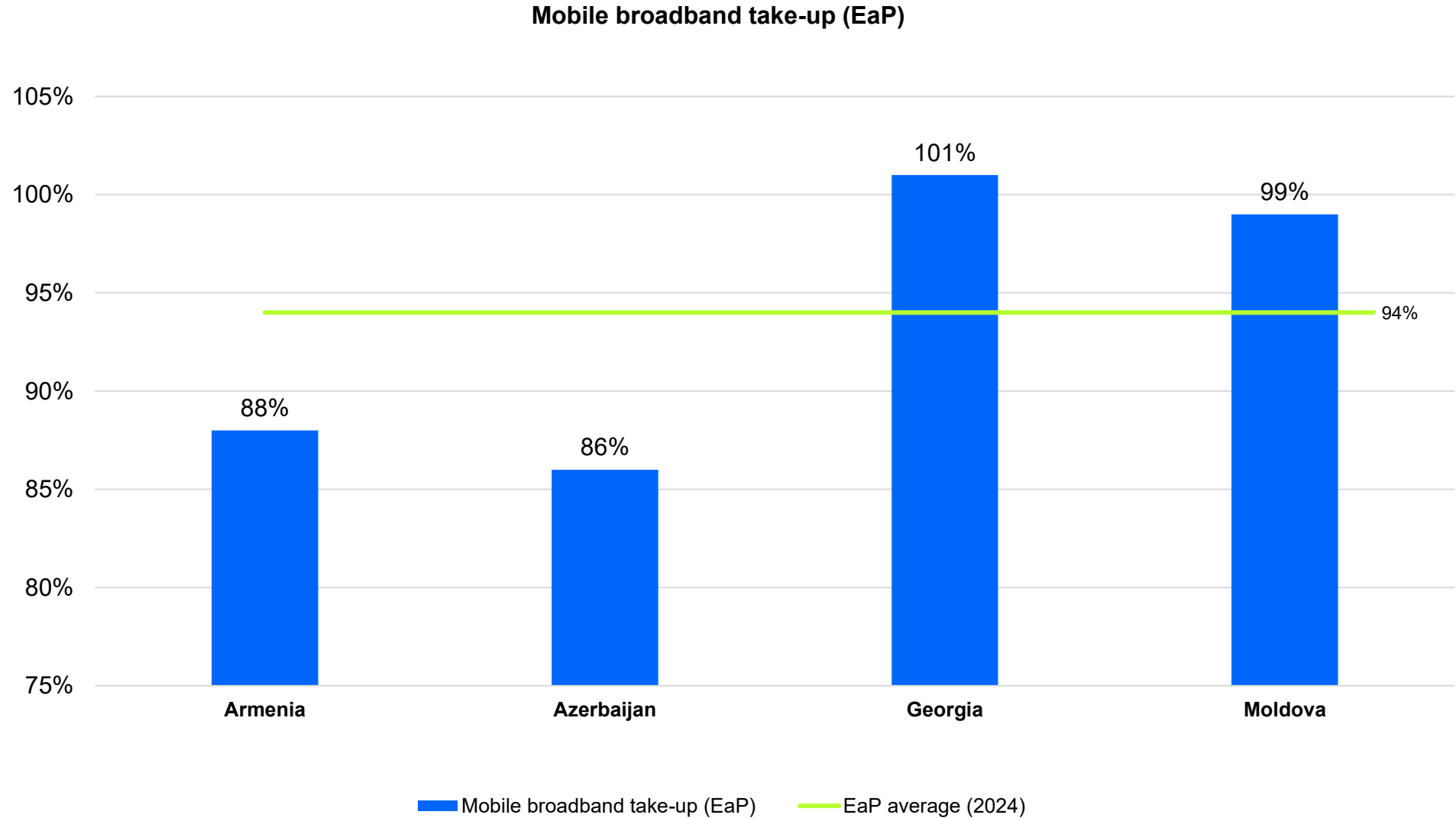
Regional comparison (3 / 4)

Mobile broadband take-up (DESI)



Regional comparison (4 / 4)

Mobile broadband take-up (EaP)



Measuring connectivity (1 / 5)

Digital Decade – targets, objectives and approach

1

Digital Decade

Comprehensive framework that guides all actions related to digital in European Union:

- Aim is to ensure all aspects of technology and innovation work for people
- Digital Decade **includes the policy programme, the targets, the objectives, the multi-country projects** and the Digital Decade **rights & principles**
- **Targets** are measurable goals for each of the four areas: connectivity, digital skills, digital business, and digital public services

2

Connectivity targets

- **Digital Decade connectivity targets by 2030:**
 - **Gigabit connectivity for everyone**
 - **High speed mobile (at least 5G) coverage everywhere**

How to measure?

Measuring connectivity (2 / 5)

Digital Decade – targets, objectives and approach

(EU) 2022/2481 of 14 December 2022 establishing the Digital Decade Policy Programme 2030 **sets out the KPIs based on which the MSs and the Commission shall measure the progress towards the digital targets established**

1

Fixed technologies

Gigabit connectivity, **measured as the percentage of households covered** by fixed Very High-Capacity Networks (VHCN). The technologies considered are those currently able to deliver gigabit connectivity, namely Fibre to the Premises and Cable DOCSIS 3.1. The evolution of the Fibre to the Premises coverage will also be monitored separately and taken into consideration when interpreting VHCN coverage data

2

Mobile technologies

5G coverage, **measured as the percentage of populated areas covered** by at least one 5G network regardless of the spectrum band used

Measuring connectivity (3 / 5)

Digital Decade – targets, objectives and approach

In a situation where progress in achieving one or more of the digital targets is regarded to be insufficient by:

- 1. The European Commission and the EU MSs;**
- 2. Where significant gaps and shortages have been identified on the basis of the results of the Report on the Digital Decade.**

The European Commission and EU MSs shall cooperate with each other to identify ways to address the shortcomings.

Measuring connectivity (4 / 5)

Digital Decade – targets, objectives and approach

In terms of timing for co-operation two milestones are being identified:

1

Milestone I

Within 2 months of the publication of an annual report (first report shall be prepared by 9 January 2024), the European Commission and the EU MSs shall endeavour to discuss the EU MSs preliminary observations, in regard to policies, measures and actions recommended by the European Commission in its report

2

Milestone II

Within 5 months of the publication of the second report and every second year thereafter, the EU MSs concerned shall submit to the European Commission adjustments to their national roadmaps consisting of policies, measures and actions they intend to undertake

If, however, an EU MS considers that no action is required and that its national roadmap does not require updating, it shall provide its reasons to the European Commission

Measuring connectivity (5 / 5)

DESI – State of Digital Decade reporting

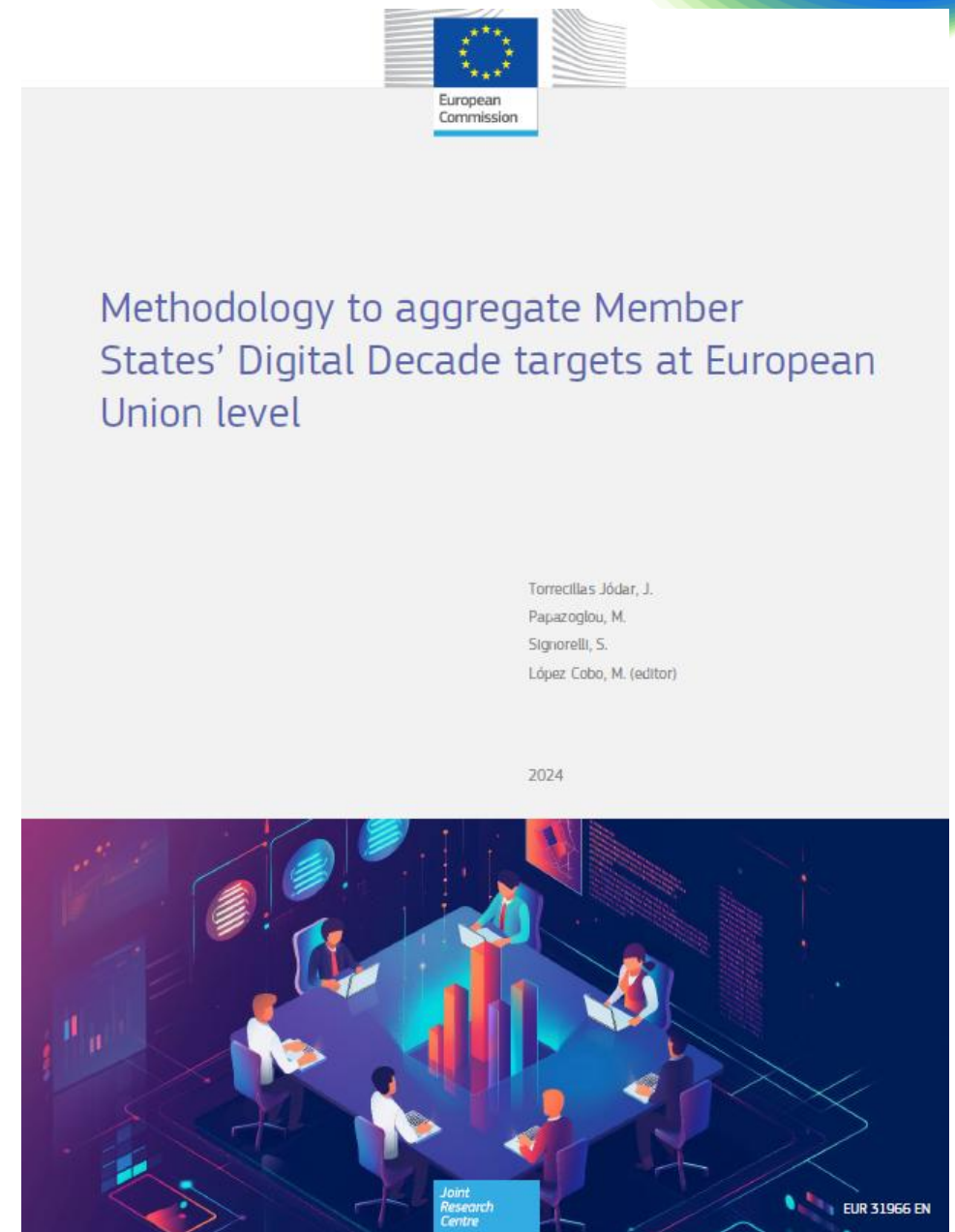
- European Union has been **monitoring** digital progress through the Digital Economy and Society Index (**DESI**) reports **since 2014**.
- **As of 2023**, and in line with the Digital Decade Policy Programme 2030, **DESI is part of the State of the Digital Decade report** and used to monitor progress towards the digital targets.



Review + calculation of synthetic indicators



Discussion/workshop on the adjustments to monitoring exercise?



Q & A

EU direction to data collection to reflect novelties

- **The EU is accelerating deployment of 5G across all populated areas**, with 94.23% coverage of households as of 2025 and full coverage projected before 2030
- **The innovation and constant change in the telecommunications area on the technologies developed / being used** (e.g. 5G, software defined networks) and **regulatory requirements** (i.e. review of roaming regulation, foreseen updates to the EECC) drive the changes in the data collection
- Thus, DESI is updated yearly to reflect technological progress and policy priorities, now featuring **10 Digital Infrastructures indicators** aligned with the Digital Decade goals in comparison to 7 indicators in 2020
- During this period, some of the indicators have been added, while others were removed

In summary, EU has been updating data collection to be in line with new technologies and policy priorities – thus bringing more complexity to the data collection methodology

KPIs highlighted in country-specific broadband profiles

1. Total broadband take-up	<i>% of households subscribing to fixed and mobile broadband</i>
2. Fixed broadband take-up	<i>% of households subscribing to fixed broadband</i>
3. At least 100 Mbps fixed broadband take-up	<i>% of households subscribing to fixed broadband of at least 100 Mbps, calculated as overall fixed broadband take-up, multiplied with the percentage of fixed broadband lines of at least 100 Mbps</i>
4. At least 1 Gbps fixed broadband take-up	<i>% of households subscribing to fixed broadband of at least 1 Gbps, calculated as overall fixed broadband take-up, multiplied with the percentage of fixed broadband lines of at least 1 Gbps</i>
5. Mobile broadband take-up (DESI)	<i>% of individuals who used the internet on a mobile device</i>
6. Mobile broadband data-only take-up	<i>% of individuals subscribing to data-only mobile broadband</i>
7. 5G spectrum	<i>Assigned spectrum as a % of total harmonised 5G spectrum</i>
8. Mobile broadband take-up (EaP)	<i>% of individuals who used the internet on a mobile device including add-on packages</i>

Synergies and misalignments in broadband monitoring (1 / 2)

Comparison of EaP vs EU DESI 2025 data collection methodologies

#	Indicators of the EaP methodology	Included in DESI 2025 (Yes / No)	Name in DESI 2025
1	Total broadband take-up	Yes	Overall internet take-up (Note: only 5G subscriptions)
2	Fixed broadband take-up	Yes	Fixed Very High-Capacity Network coverage (Note: only FTTH, FTTB and Cable DOCSIS 3.1)
3	At least 100 Mbps fixed broadband take-up	Yes	Share of fixed broadband subscriptions \geq 100 Mbps”
4	At least 1 Gbps fixed broadband take-up	Yes	Share of fixed broadband subscriptions \geq 1 Gbps
5	<i>Mobile broadband take-up (DESI)</i>	No	N/A
6	<i>Mobile broadband data-only take-up</i>	No	N/A
7	5G spectrum	Yes	5G spectrum
8	<i>Mobile broadband take-up (EaP)</i>	No	N/A

Synergies and misalignments in broadband monitoring (2 / 2)

Comparison of EaP vs EU DESI 2025 data collection methodologies

#	Indicators included in DESI 2025	Description of the indicator
1	Fibre to the Premises (FTTP) coverage	% of households covered by FTTH and FTTB
2	Overall 5G coverage	% of populated areas with coverage by at least one 5G mobile network
3	5G coverage in the 3.4-3.8 GHz band	% of populated areas with coverage by 5G using the 3.4-3.8 GHz spectrum band
4	5G SIM cards share of population	5G mobile subscriptions defined as SIM cards that generated any internet traffic on a domestic 5G network in the last 90 days
5	Edge nodes (estimates)	Estimated number of edge computing nodes providing latencies below 20 milliseconds.

Reflections

- EU4Digital developed the framework and methodology for measuring and reviewing broadband access developments in the Eastern partner countries in 2020, with limited updates incorporated in 2023
- As shown in the tables of previous slides, **differences exist in indicators being collected, indicators' definitions and data collection practices**, leading to challenges in comparability and integration with EU-level assessments like DESI
- Also, the current EU4Digital data collection methodology includes **several indicators specifically tailored to market structures of EaP countries'** – which does not allow to offer comparisons to that of the EU

Suggestions on the way forward

Therefore, EU4Digital foresees two strategic options for alignment and progress:

Option 1 – full alignment with EU standards

- Ensure compliance with EU regulatory and monitoring frameworks.
- Conduct a comprehensive review of all indicators to match EU definitions and methodologies.
- Expand the scope to include emerging EU priorities (e.g., gigabit connectivity, 5G readiness)

Option 2 – tailored EaP approach

- Focus on EaP-specific market structures and realities.
- Adjust indicators and methodologies based on regional feedback and needs.
- Maintain flexibility while ensuring strategic coherence with EU digital objectives.

Q & A

Thank you