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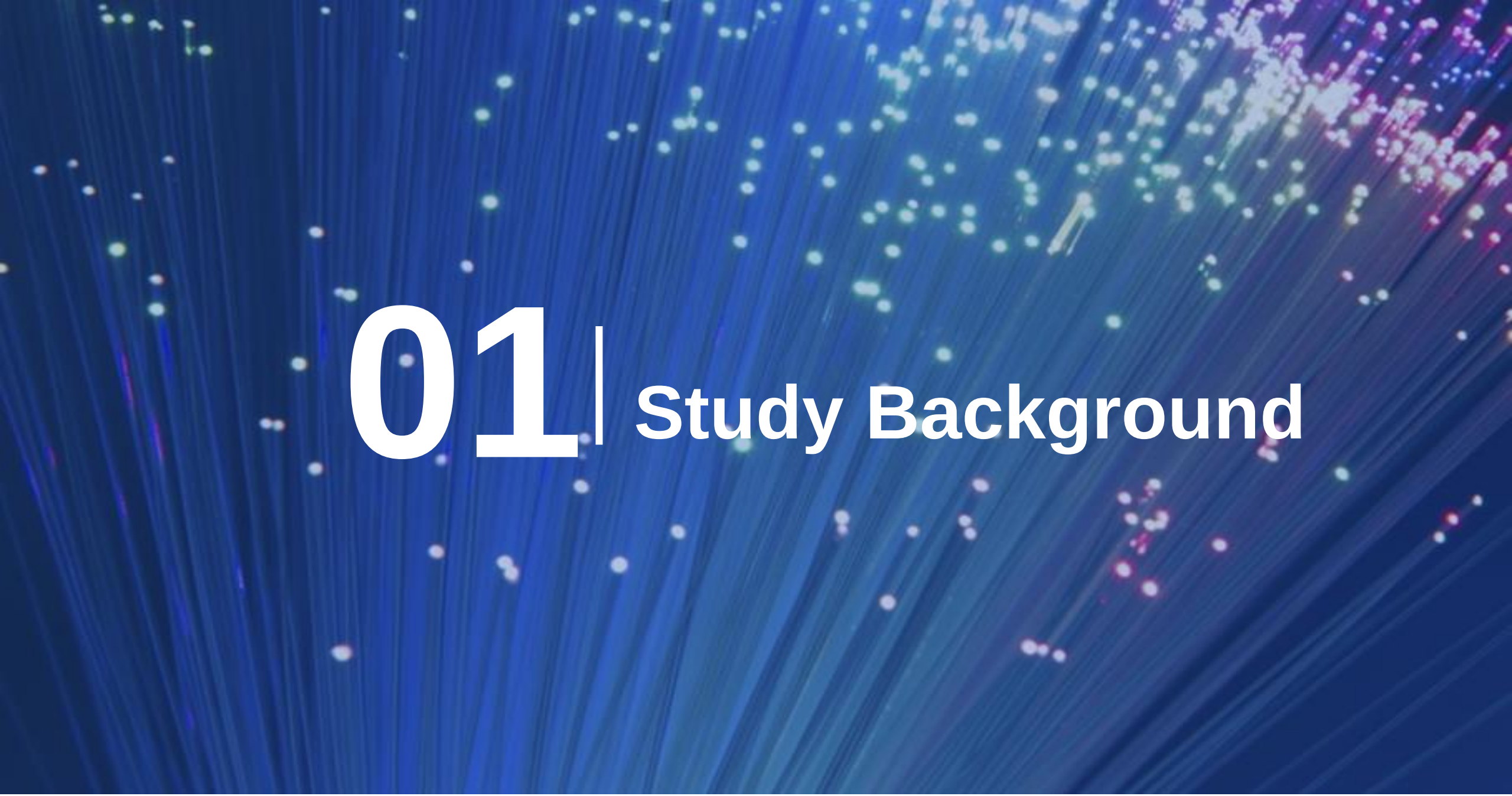
FTTH Council Europe - Panorama

Markets at September 2019

FTTH Council Europe Webinar – April 23rd, 2020

Agenda

1. Study Background
2. General overview and main trends
3. Leading countries
4. European Ranking
5. Conclusion – Key outputs
6. FTTH in Rural Areas
7. Appendix



01 | Study Background

Methodology

- Mission on behalf of the **FTTH Council Europe**
- Provide a complete summary of the status of FTTH/B in Europe at **September 2019**

ACTIONS

Scope

- Analysis of 39 countries
- Data per player for FTTH/B and other fibre-based architectures
- Key parameters study: technical, financial, business model, figures

Bottom-up methodology

- Desk research
- Direct contacts with leading players and IDATE partners within countries
- Information exchange with FTTH Council Europe members

Results

- Both quantitative and qualitative data
- Market status in the country
- Strategic approach of involved players

Important Definitions

- **Homes Passed** — The potential number of Premises which a Service Provider has capability to connect to an FTTH/FTTB network in a service area with minimal additional installation
- **Sockets** — The connection point of a single fibre service provider inside/outside a premises. It is possible to have multiple sockets if the location is serviced by multiple FTTH network operators.
- **Subscribers** — The number of Premises which are connected to a network and are already subscribers

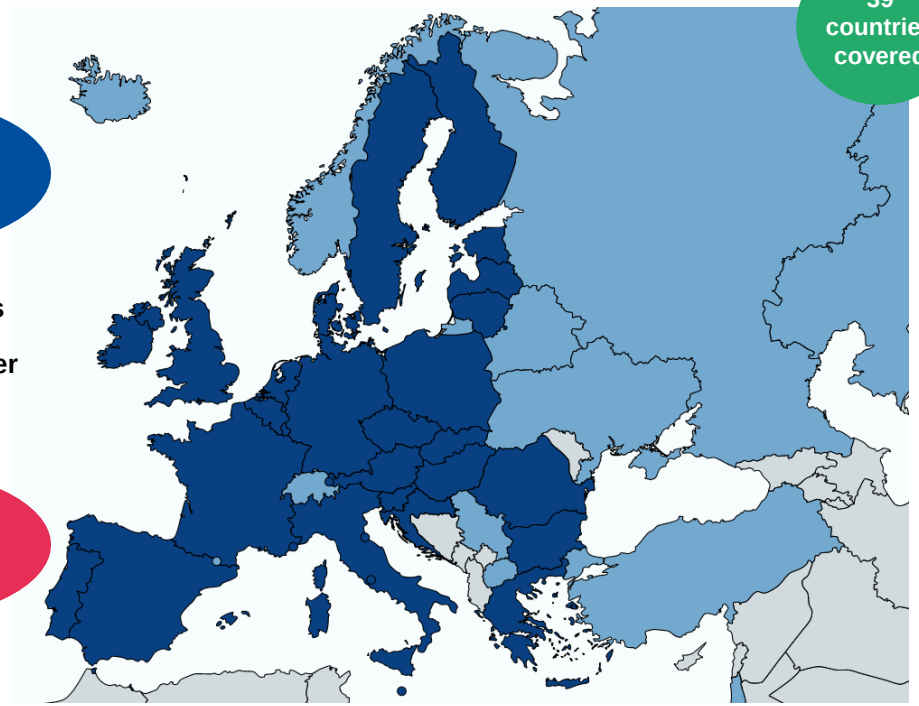
02 | General overview and main trends

FTTH/B figures as at September 2019

As at September 2019 in EU39*:

- **70.4 million FTTH/B subscribers**
- **Almost 172 million FTTH/B Homes Passed**

FTTH Council Europe scope at September 2019

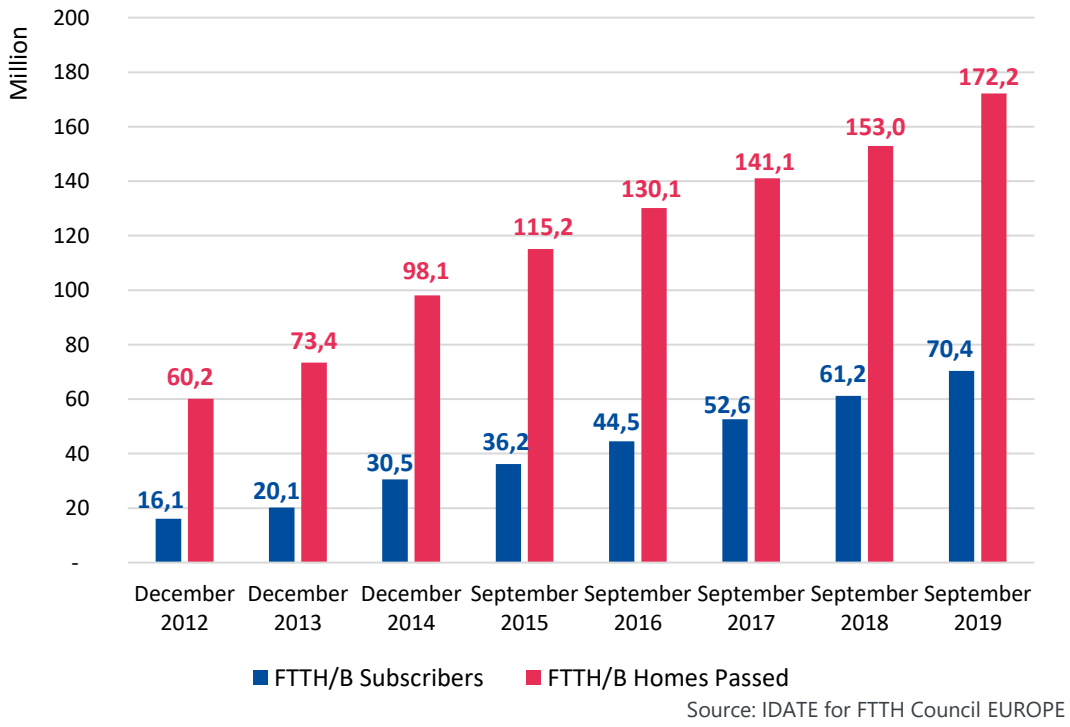


(1) EU39 = EU28 (excl. Cyprus) + 4 CIS countries + Andorra, Iceland, Israel, North Macedonia, Norway, Serbia, Switzerland, Turkey

(2) Cyprus was replaced by North Macedonia at end-2012 because the FTTH/B market is much more developed in this country.

FTTH/B European market evolution (EU39)

In terms of Homes Passed and Subscribers (2012-2019)



Source: IDATE for FTTH Council EUROPE

Trends from 2012 to 2019

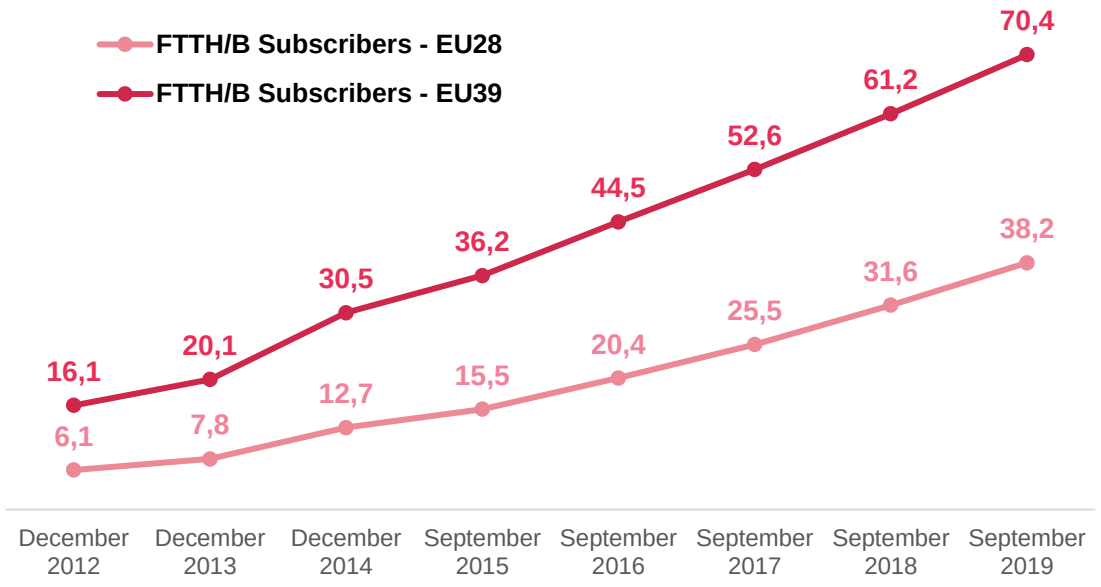
FTTH/B Subscribers x 4.4

Homes Passed evolution x 2.9

Historical data and growing trends (EU28 / EU39)

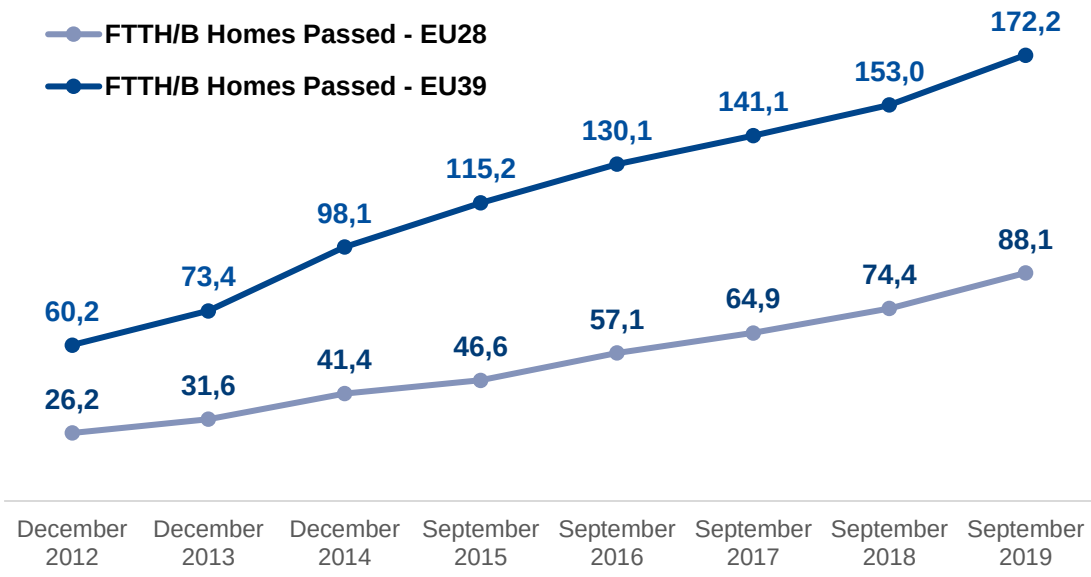
- EU28 consolidated FTTH expansion over EU39 countries
- Around 51% of FTTH deployments performed inside EU28 countries (influenced by EU Digital Agenda goals)

Evolution of FTTH/B Subscribers (million)
EU28 / EU39 comparison



Source: IDATE for FTTH Council EUROPE

Evolution of FTTH/B Homes Passed (million)
EU28 / EU39 comparison

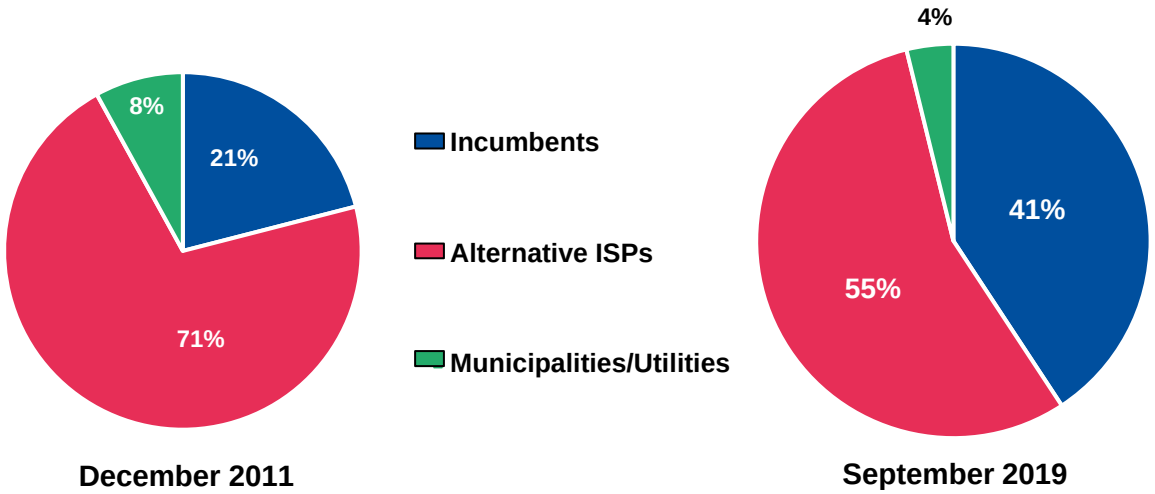


Source: IDATE for FTTH Council EUROPE

Incumbents are committed to migrate towards FTTH/B solutions

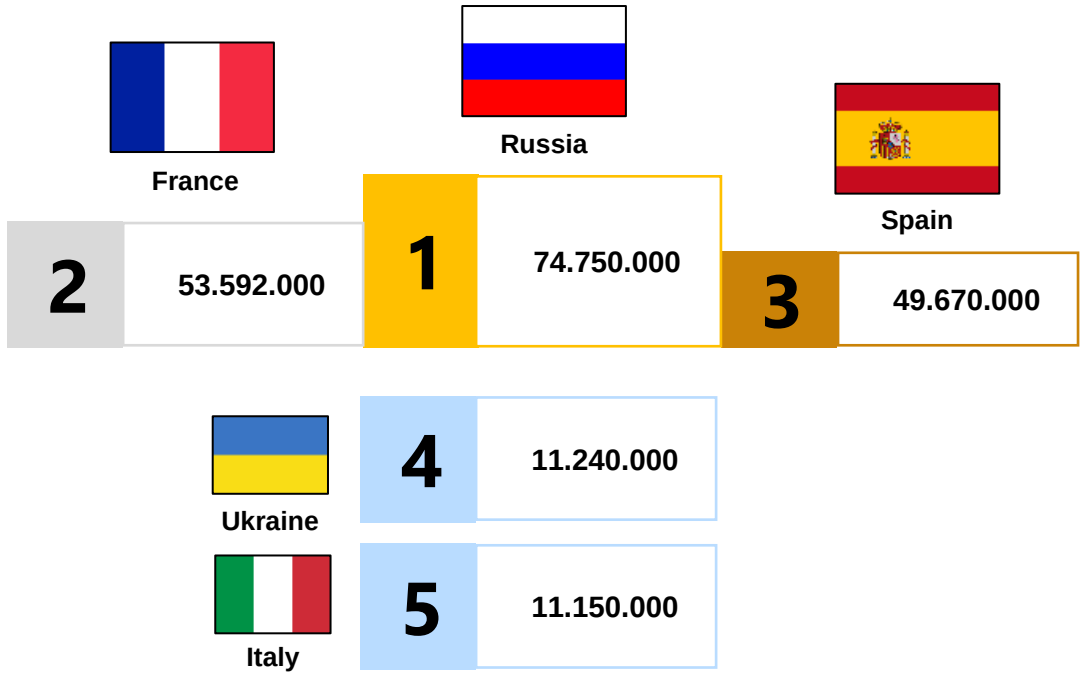
- Analysis of around 400 FTTH/B projects in EU39 at September 2019
- 41% of Homes are passed by incumbents. Will increase based on new incumbent strategies towards FTTH/B deployments.
- Municipalities, utilities and alternative ISPs cover many remote and isolated areas. Further enhanced with public funds and incentives.

Breakdown of FTTH/B Sockets deployed by type of player (%)
Data comparison between Dec. 2011 and Sept. 2019



Source: IDATE for FTTH Council EUROPE

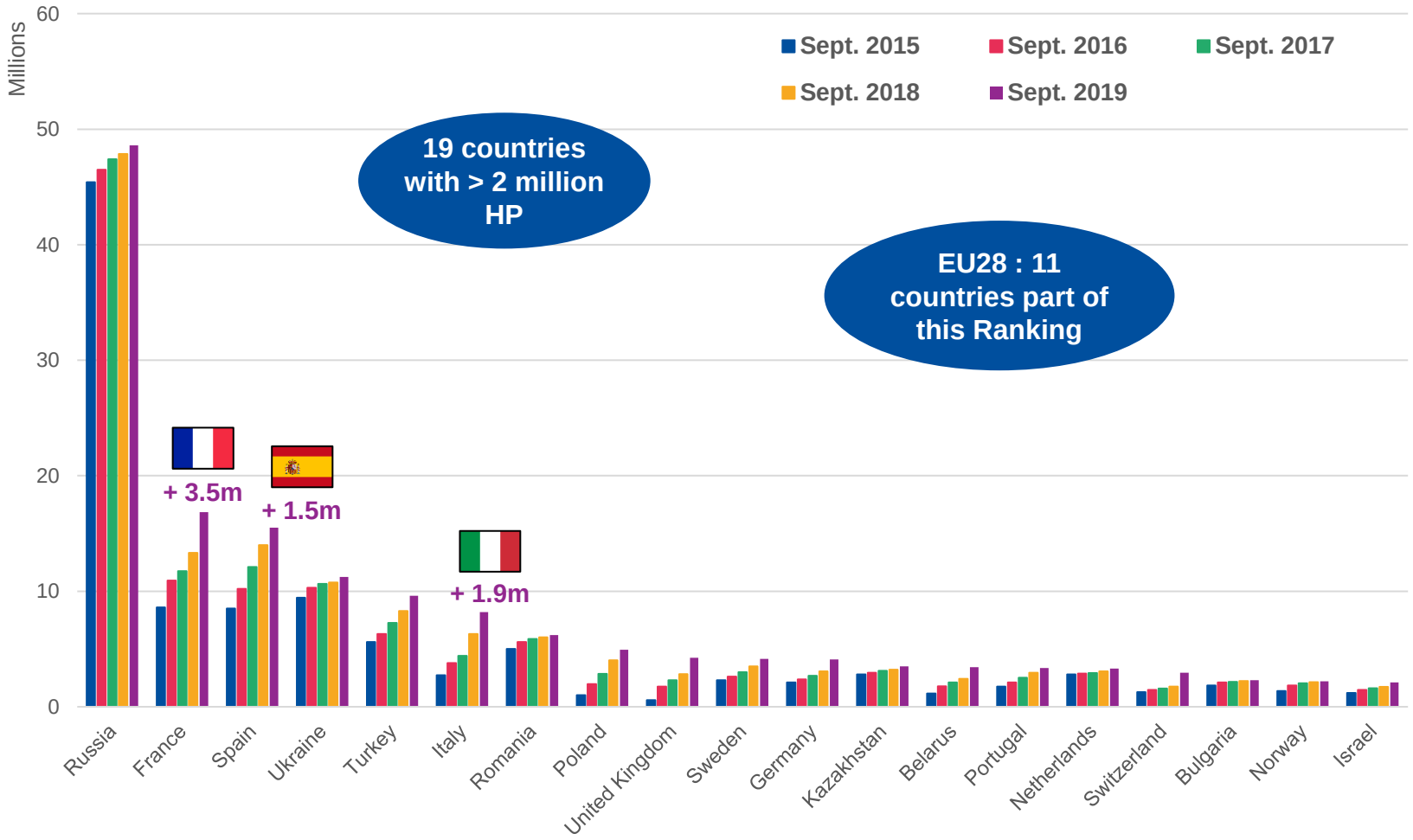
Breakdown in terms of FTTH/B Sockets deployed
Top 5 European countries



03 | Leading countries

General Ranking: FTTH/B Homes passed

European ranking in terms of FTTH/B Homes passed over time (in million homes)
Data comparison between Sept. 2015 and Sept. 2019



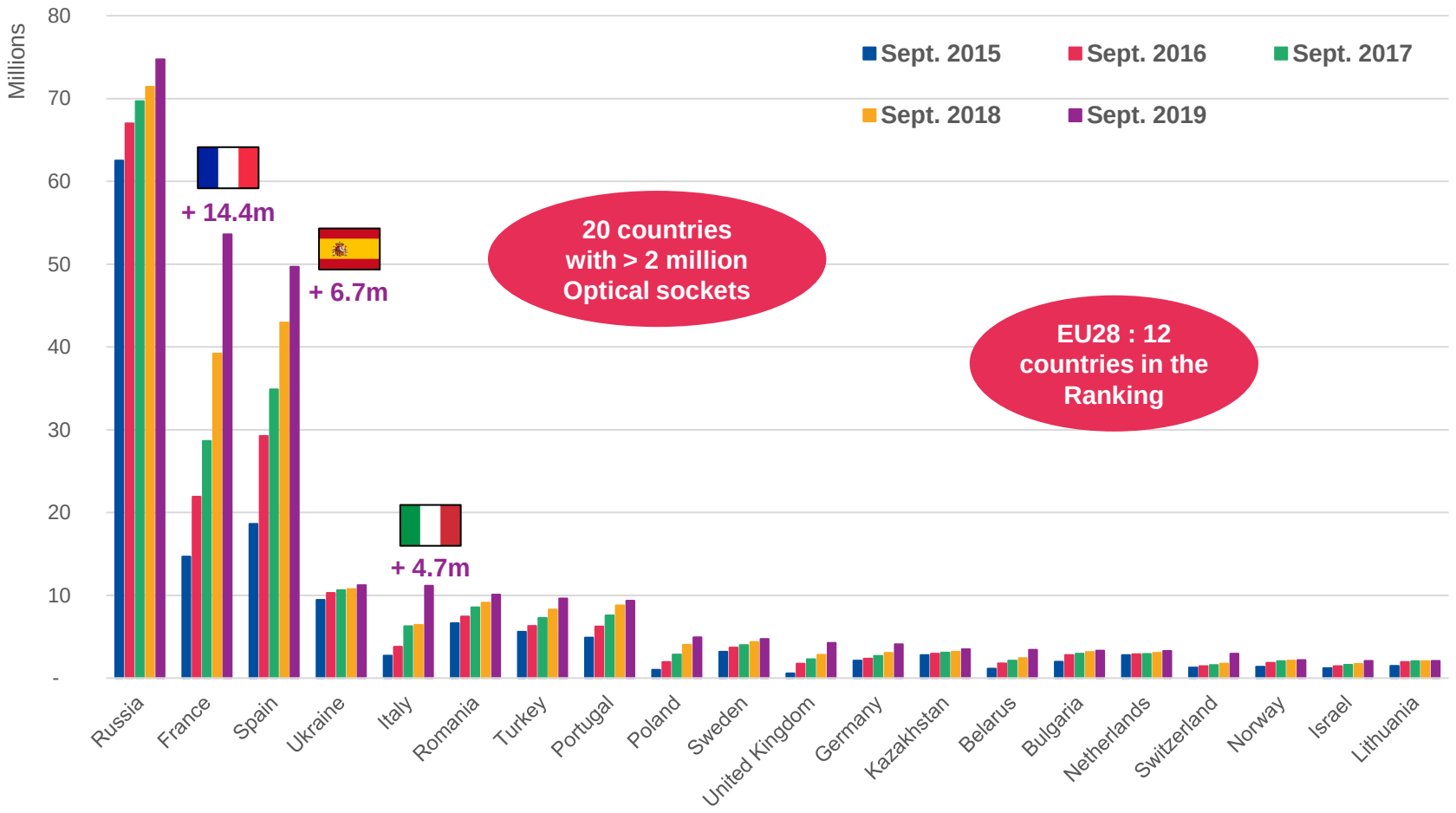
5 fastest growing markets in Europe
Data from Sept. 2018 to Sept. 2019 (in terms of FTTH/B Homes Passed)

Belgium	+ 307 %	+ 78k
Ireland	+ 70.4 %	+ 289k
Switzerland	+ 69.1 %	+ 1.2m
United Kingdom	+ 50.8 %	+ 1.4m
Germany	+ 33.5 %	+ 1.0m

General Ranking: FTTH/B Sockets deployed*

European ranking in terms of FTTH/B Sockets deployed (in million homes)

Data comparison between Sept. 2015 and Sept. 2019



5 fastest growing markets in Europe

Data from Sept. 2018 to Sept. 2019 (in terms of FTTH/B Sockets Deployed)

Belgium	+ 307 %	+ 78k
Italy	+ 72.9 %	+ 4.7m
Ireland	+ 70.4 %	+ 289k
Switzerland	+ 69.1 %	+ 1.2m
United Kingdom	+ 50.8 %	+ 1.4m

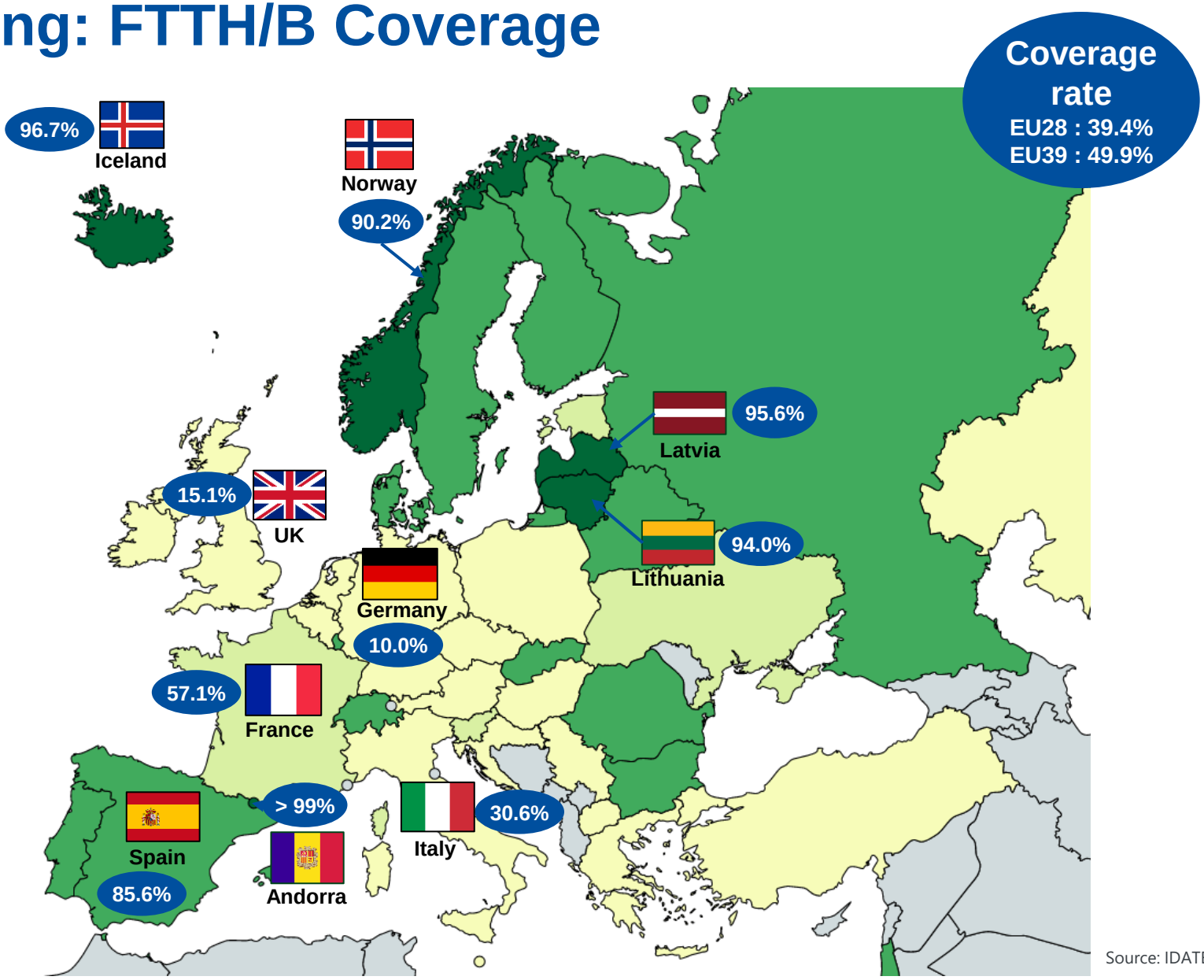
***FTTH/B Sockets Deployed:** The connection point of a single fibre service provider inside/outside a premises. It is possible to have multiple sockets if the location is serviced by multiple FTTH network operators.

Source: IDATE for FTTH Council EUROPE

General Ranking: FTTH/B Coverage

FTTH/B coverage* as at September 2019
(* Homes passed / Households)

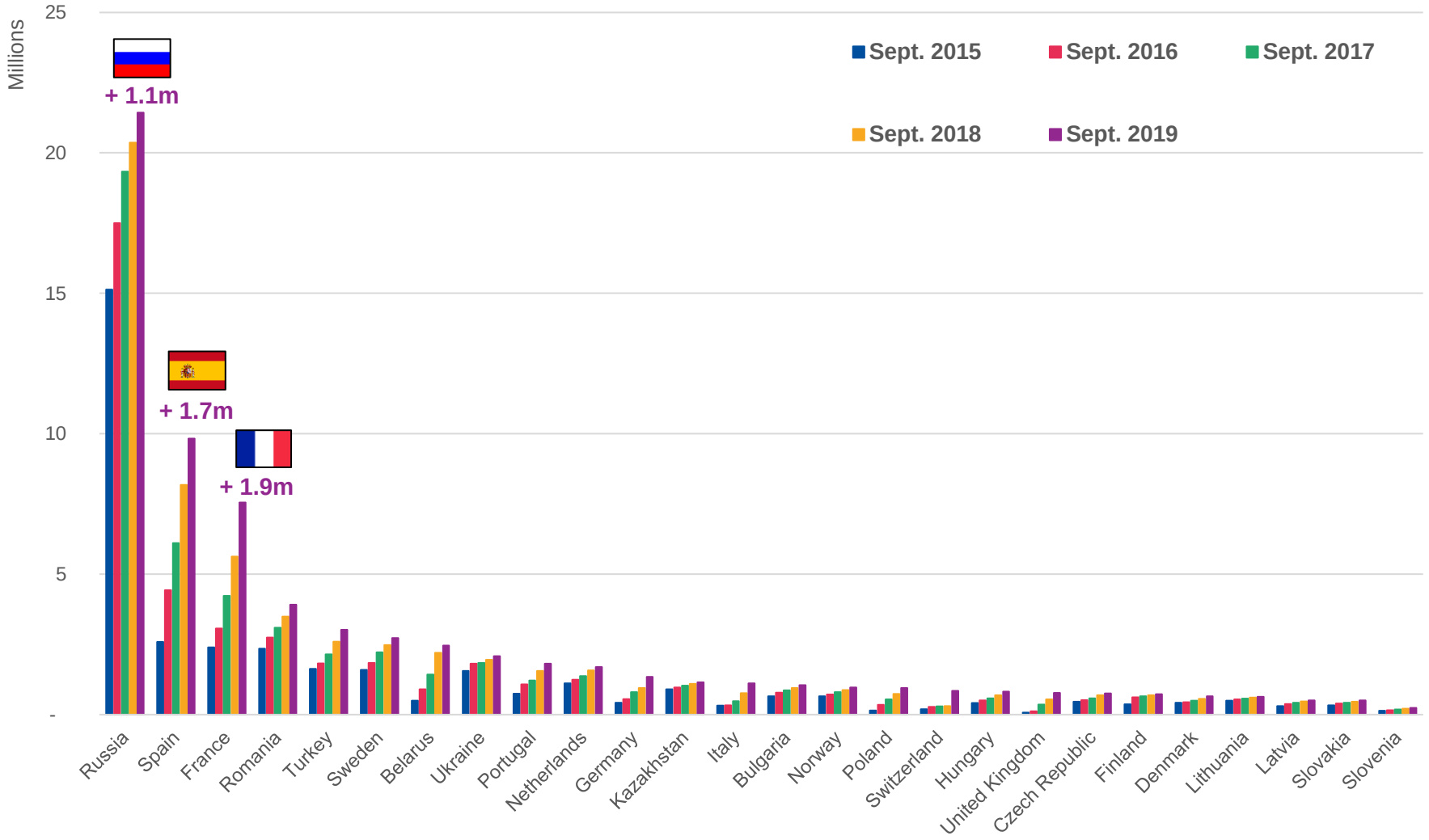
- FTTH/B coverage > 90%
- FTTH/B coverage 70 – 90 %
- FTTH/B coverage 50 – 70 %
- FTTH/B coverage < 50 %



Source: IDATE for FTTH Council EUROPE

General Ranking: FTTH/B Subscribers

European ranking in terms of FTTH/B Subscriptions (million)
Data comparison between Sept. 2015 and Sept. 2019



5 fastest growing markets in Europe
Data from Sept. 2018 to Sept. 2019 (in terms of FTTH/B Subscribers)

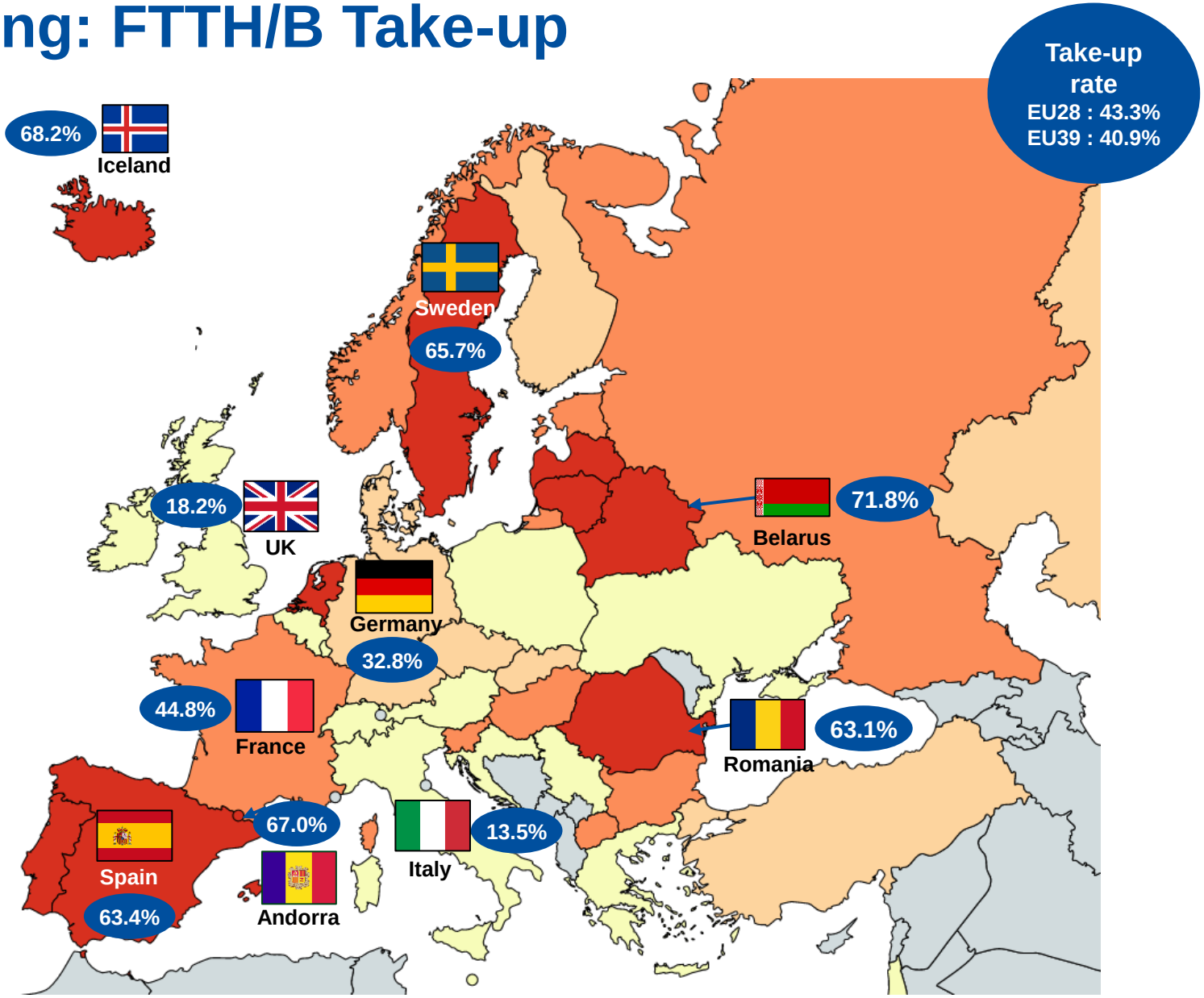
Greece	+ 285 %	+ 23k
Switzerland	+ 176 %	+ 538k
Belgium	+ 111 %	+ 13k
Ireland	+ 93 %	+ 70k
Italy	+ 45.3 %	+ 346k

Source: IDATE for FTTH Council EUROPE

General Ranking: FTTH/B Take-up

FTTH/B take-up* as at September 2019
(*Subscriptions / Homes Passed)

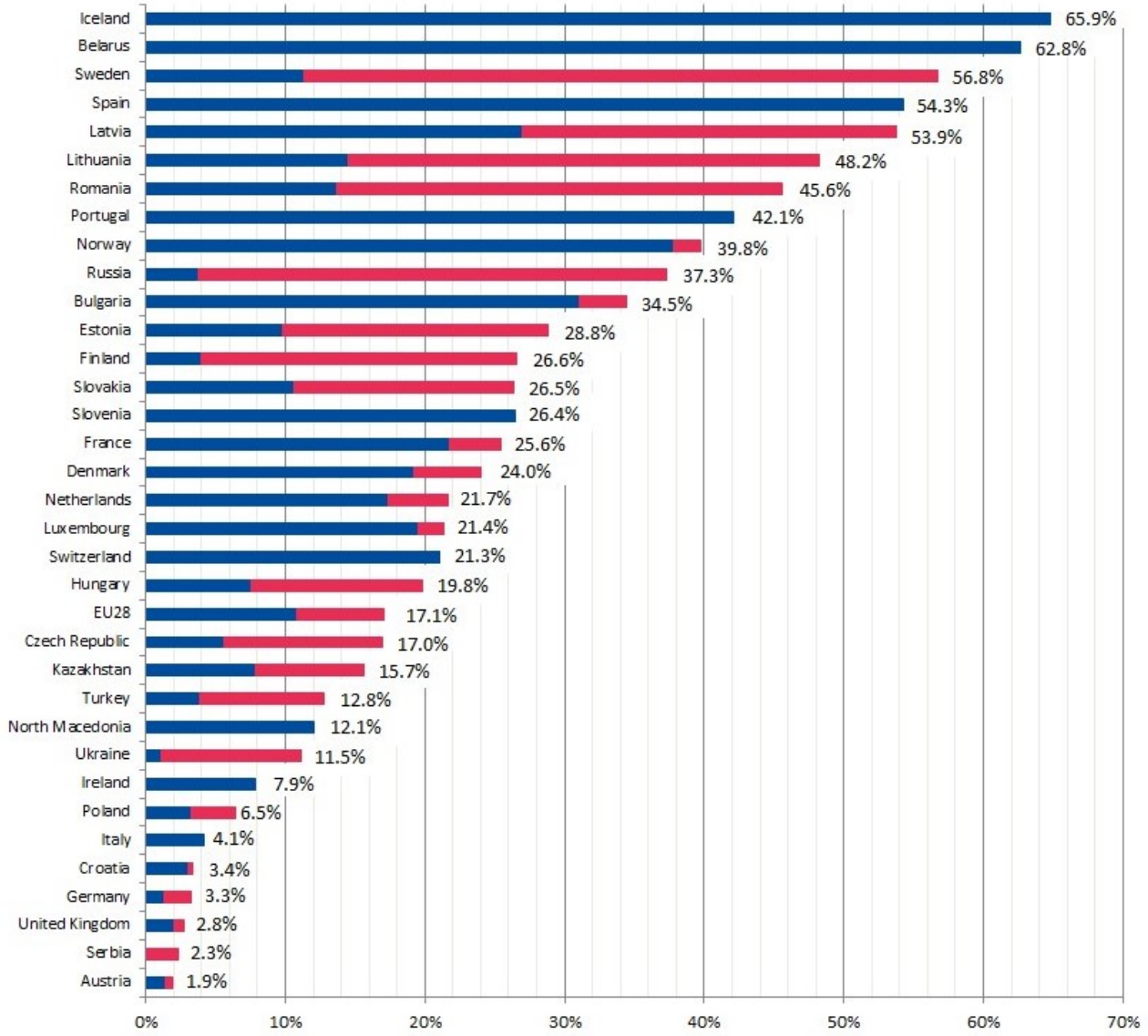
- FTTH/B take-up > 50%
- FTTH/B take-up 40 – 50 %
- FTTH/B take-up 30 – 40 %
- FTTH/B take-up < 30 %



Source: IDATE for FTTH Council EUROPE

04 | European Ranking

European Ranking at September 2019



Penetration rates of European countries at September 2019
(FTTH/B Subscriptions / Households)

- Includes countries of +200k Households in which FTTH/B subscribers represent at least 1% of total households (except Iceland falling short the 200k Households mark)
- Eastern Europe and Nordic countries are among the top of penetration ranks, mainly due to a proactive state intervention towards fibre expansion
- Some major European countries are lagging behind (except. Spain and Portugal) due to a predominance of copper-based technologies (VDSL, G.Fast) and/or cable networks (DOCSIS 3.0 / 3.1)

Source: IDATE for FTTH Council EUROPE

05 | Key Conclusions

Indicators affecting the FTTH adoption

Positive criteria

Data and bandwidth continues to grow, more operators and governments are working towards future proofed FTTH deployments

During 2019, more governments launch subsidy programmes to reach new FTTH areas, including rural regions

More operators migrate towards FTTH, they are focusing on copper switch-off and cable migration towards full-fibre

The trend of mutualized networks and network sharing agreements will accelerate FTTH deployments

New initiatives defined by European governments to reach Digital Agenda goals by 2025

Indicators affecting the FTTH adoption

Negative impacts

	FTTH investments delayed due to alternative technologies such as Cable (Docsis 3.1) and G.Fast
	Misleading Fibre advertising suppresses demand
	Fixed-wireless and hybrid access becoming more common in isolated areas, thus delaying FTTH deployments. 5G deployments are now beginning, while high spectrum bands (26Ghz) could delay FTTH in some residential markets
	Some European countries with high speed broadband goals defined do not specify specific technology such as FTTH
	Lack of mass market applications to monetize FTTH deployments

Key conclusions

Public Commitment

- **Government now committed to work with all telecom actors:** EC Digital Agenda implies subsidies & policy framework per country and promoted fibre expansion
- **Rural and isolated areas are now a clear target for fibre**

Regional Recap

- **Pent Up Demand clear:** Seeing large pent up demand (high connection rates) in regions that have recently started large FTTH rollouts (UK / Italy)
- **EU28 moving forward towards FTTH/B:** More implication from these countries deploy FTTH in areas not covered and also to migrate existing copper-based and cable-based towards fibre.
- **EU39** more than 172 **million homes** with FTTH/B, now **covering 50%** of total Homes
- Countries like **Italy**, **Belgium, Ireland** and **Switzerland** have experienced **strong growth**, **homes passed** up more than 30%, **subscribers** up more than 45%

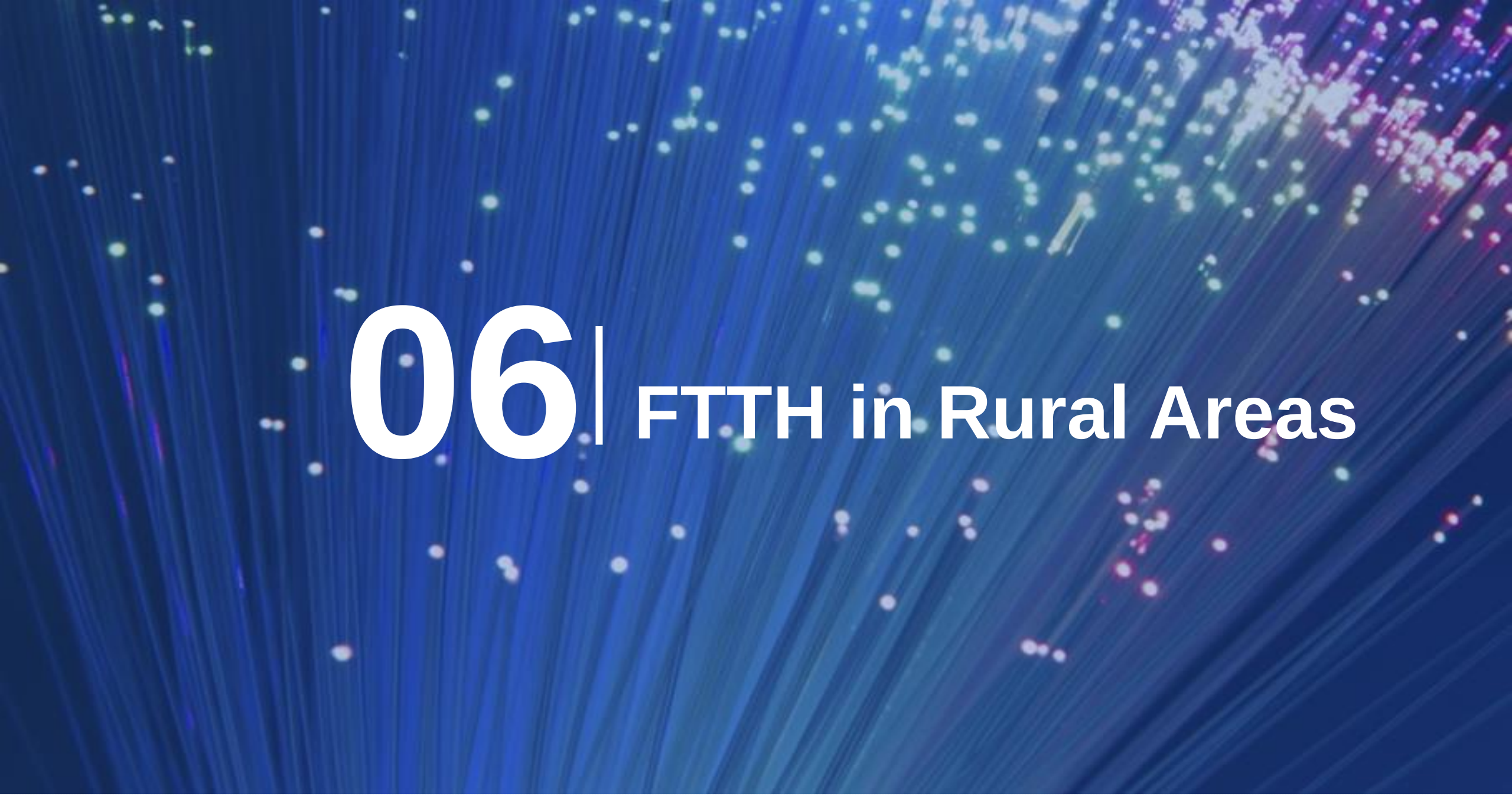
Top 3 - Main movers in terms of Homes Passed in absolute numbers

Data comparison between Sept. 2018 and Sept. 2019

France	+ 3.5 m

Italy	+ 1.9 m

Spain	+ 1.5 m



06 | FTTH in Rural Areas

Europe is committed to reach non dense areas with high speed networks

Huge discrepancies between countries

Digital Agenda for Europe (DAE)

Gigabit Society: DAE seeks to achieve the best possible Internet connection for all EU citizens by 2025 (1 Gbps)

Goals for 2020:

- Provide an Internet connection of at least 30 Mbps to all Europeans
- Guarantee 5G connectivity in at least one major city in each Member State by 2020

Goals for 2025:

- Provide a 1 Gbps connection to all socio-economic institutions
- Provide an Internet connection of at least 100 Mbps to all European households
- Guarantee uninterrupted 5G coverage in all urban areas and on the main terrestrial transport corridors

Rural areas are part of these goals and stakeholders should be committed to deploy these networks, where full fibre is one the main options.

Strategies and technological approaches in each country under study

- **3 approaches to reach DAE targets:**

Rural FTTH in Europe

- This study is based on data and information collected by the European Commission (through DESI studies) and information gathered from local regulators in each country (if available).

Definition of Rural and Urban households are the same of the European Commission in order to be aligned with their definition. The goal is to provide a general overview of the evolution of rural FTTH deployments in Europe in order to seek improvement opportunities in each country under study.

- FTTP (as used by the EC) refers to FTTH and FTTB connections.

- **Defining Household and Rural Areas:** EC level definition of Rural areas exists with the proportion of NUTS3 (*) in an area with a density of inhabitants less than 100 hb/Km².

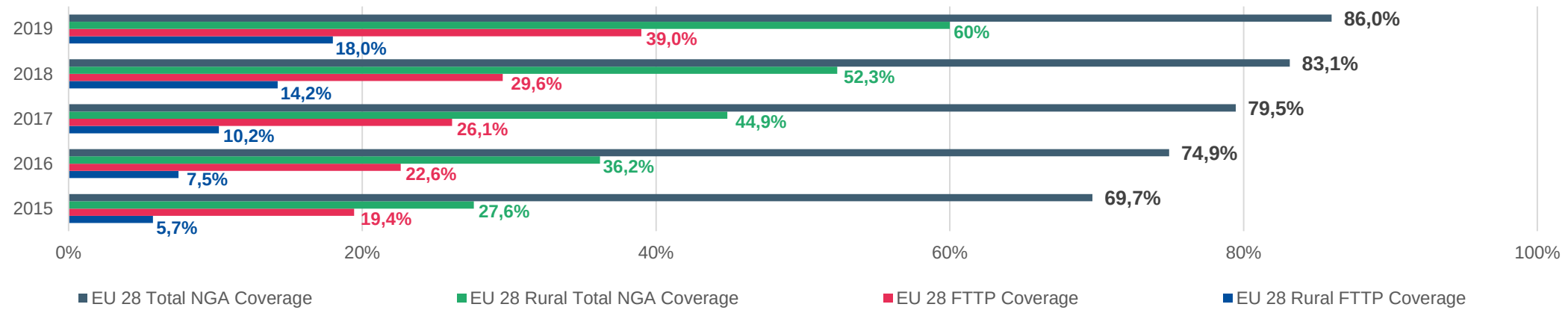
The EU Commission estimates rural households based on the population data published annually by Eurostat and average household size figures also published by Eurostat annually for each country. This approach allows the EC to maintain a unified methodology across all of the study countries using one data source (NUTS: Nomenclature of Territorial Units for Statistics)

Many areas designated as Rural can contain higher density locations that can be served via FTTH in an economical way.

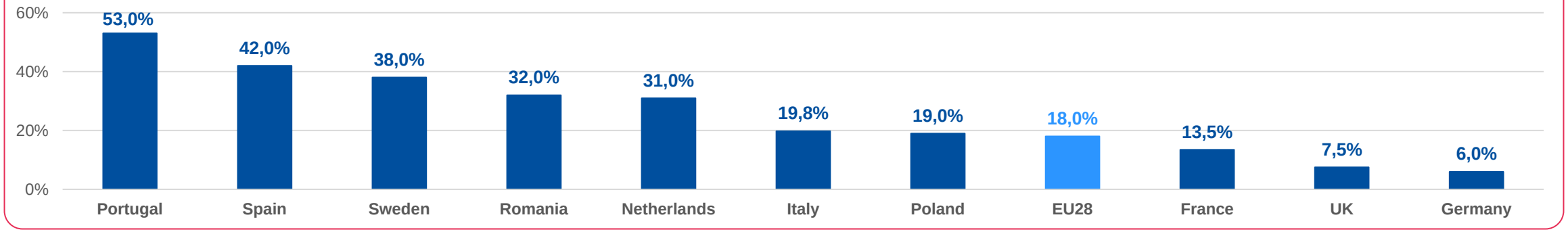
Europe is committed to reach non dense areas with high speed networks

Huge discrepancies between countries

EU28 coverage evolution in terms of: Rural FTTP, Total FTTP, Rural NGA and Total NGA



Rural FTTP coverage, Countries under study vs EU28 (est. 2019)



Source: European Commission, Regulators, IDATE

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