

DIALOG CONSULT / VATM

6. Market Analysis Gigabit Connections 2024

Results of a survey of member companies in the association
"Association of the Providers of Telecommunications
and Value-Added Services" in the first quarter of 2024

This study analyses the supply and demand situation for gigabit connections in Germany in the first half of 2024

- The analysis is based on the evaluation of the following sources:
 - **Written survey of VATM member companies and other carriers** from March to April 2024
 - **Corporate publications, financial reports and press releases**
 - Publicly accessible **studies** (e.g. FTTH-Council Europe, Federal Network Agency, ANGA)
 - Press articles and expert interviews
- With over 170 members, VATM is the only association that covers **all areas of the telecommunications industry**: Fixed and mobile network providers, companies expanding fibre optics, access providers, Service providers and value-added service providers
- In the German telecommunications market, VATM member companies provide **more than 85 per cent of the fixed network connections of all competing companies**
- VATM member companies generate **more than 90 per cent of the fixed network sales of all competitor companies**
- **Gigabit-capable connections** can technically offer downlink bandwidths of **at least 1 Gbit/s** – this includes HFC connections with DOCSIS 3.1 standard and FTTH/H connections, but not VDSL and mobile phone connections or satellite
- The decisive factor for being considered a gigabit-capable connection is that the speed of at least 1 Gbit/s is **possible** and that a gigabit product is **offered** – **but not** that this bandwidth is actually booked by customers

Contents

- I. Broadband market overview
- II. Gigabit coverage
- III. Gigabit demand
- IV. Fibre optic supply and demand
- V. Bandwidth and data volume
- VI. Fibre optic funding from the federal government
- VII. Outlook for 2024 Appendix

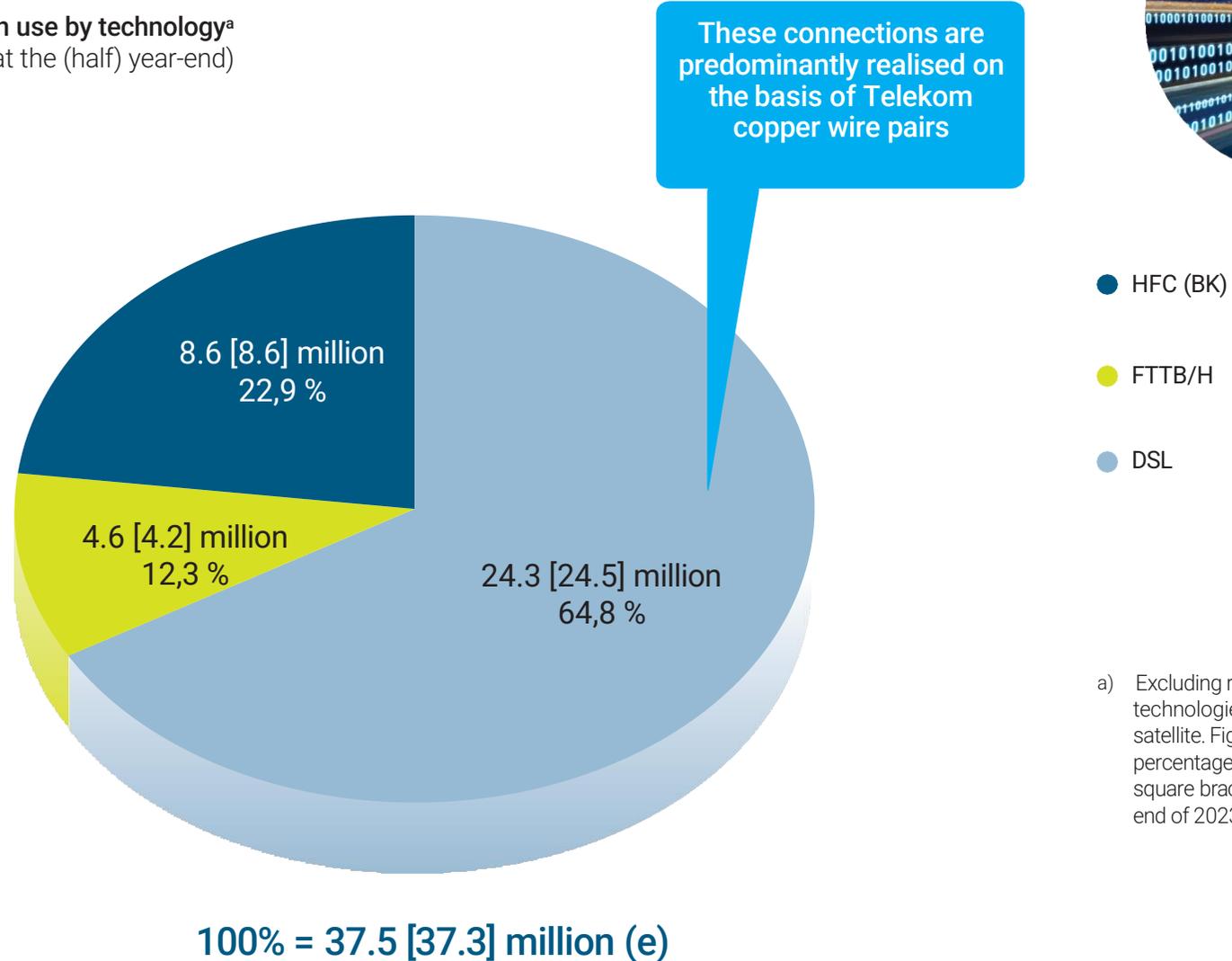
Chapter I.

Broadband market overview

#Wettbewerbverbindet

Initial situation: In 2024, almost two thirds of broadband connections used by customers will still be based on Telekom's copper-wire access network – only one third will be gigabit-capable

Fig. 1: Broadband connections in use by technology^a
(Homes Activated, in each case at the (half) year-end)



#Wettbewerbindet

Chapter II.
Gigabit coverage

#Wettbewerbverbindet

Depending on their scope, the terms used in the international literature and in this study refer to distinctive or cumulative quantities

Fig.2: Range and designations of FTTB/H fibre optic connections^a

Description of the variants

A fibre optic connection line or empty conduit system designed for the installation of an FTTB/H connection, (a) runs past the property at a maximum distance of 20 metres or (b) runs up to or even onto the property but is not yet connected to the building

A fibre optic connection line is installed including the house connection – there is no usage contract

A fibre optic connection line that extends into the building is connected to the internal telecommunications network and is used under contract

Internationally used terminology^a (e.g. FTTH Council, EU, BNetzA)

Designations in this study

Homes Passed

Homes Connected

Homes Activated

- **Supplyable households/SMEs**
(no connection available)
- **Non-active connections**
(supplied households, not active)
- **Active connections**
(supplied households, contract customers)

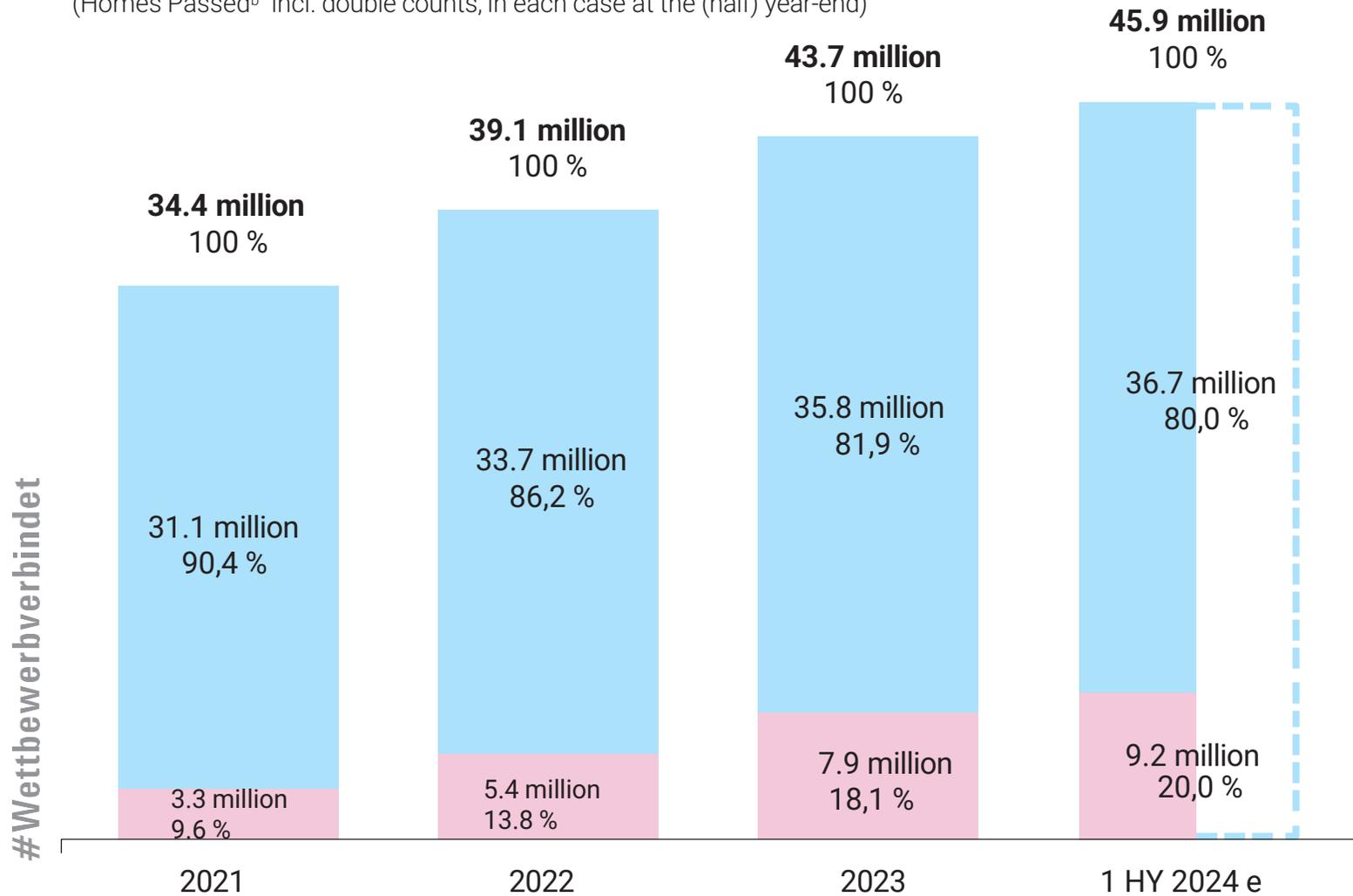
a) Further technical intermediate stages such as "Homes passed+" or "Homes prepared" are not considered in detail in this study.



FTTB/H connection variants

80 per cent of gigabit-capable Homes Passed households/SMEs are reached by competitors – competitors are by far the most important driver of the gigabit society

Fig. 3:^a households/SMEs that can be supplied with gigabit-capable networks by provider (Homes Passed^b incl. double counts, in each case at the (half) year-end)

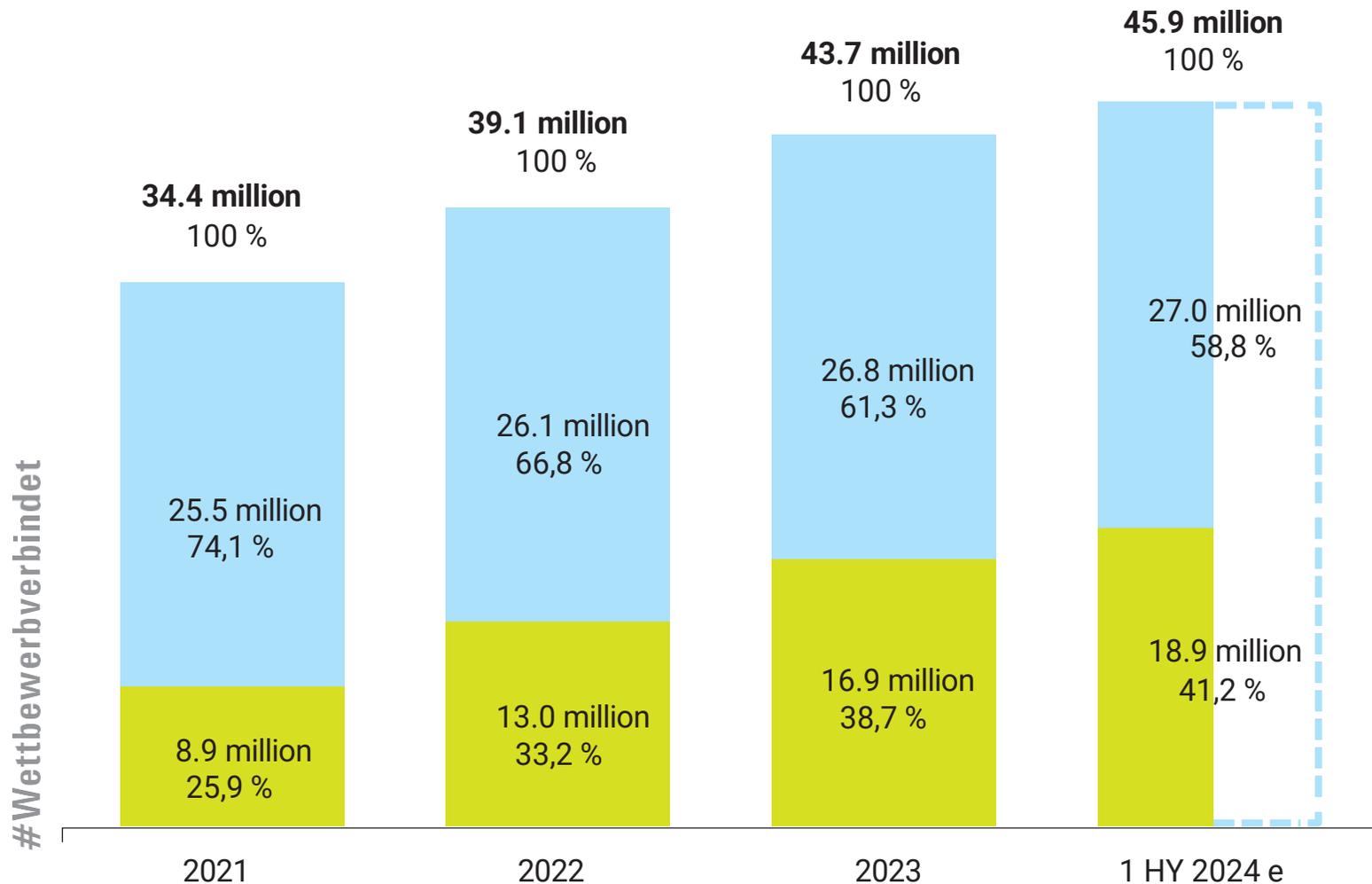


- Competitors
- Telekom Deutschland

- a) Incl. double counting, as numerous households can be supplied with both HFC and FTTB/H networks.
- b) See the definitions of Homes Passed and Households/SMEs. Fig. 2.

Almost 60 per cent of households/SMEs that can be supplied with gigabit-capable networks will be reached by HFC networks – FTTB/H share increases significantly by 2 million in the first half of 2024

Fig. 4:^a Households/SMEs that can be supplied with gigabit-capable networks by technology
 (Homes Passed^b incl. double counts, in each case at the (half) year-end)



- HFC with DOCSIS
3.1
- FTTB/H

- a) Incl. double counting, as many households/SMEs can be reached with both HFC and FTTB/H networks. Figures between the columns = (semi-) annual growth rate of the segment.
- b) For the definition of Homes Passed and households/SMEs s. Fig. 2.

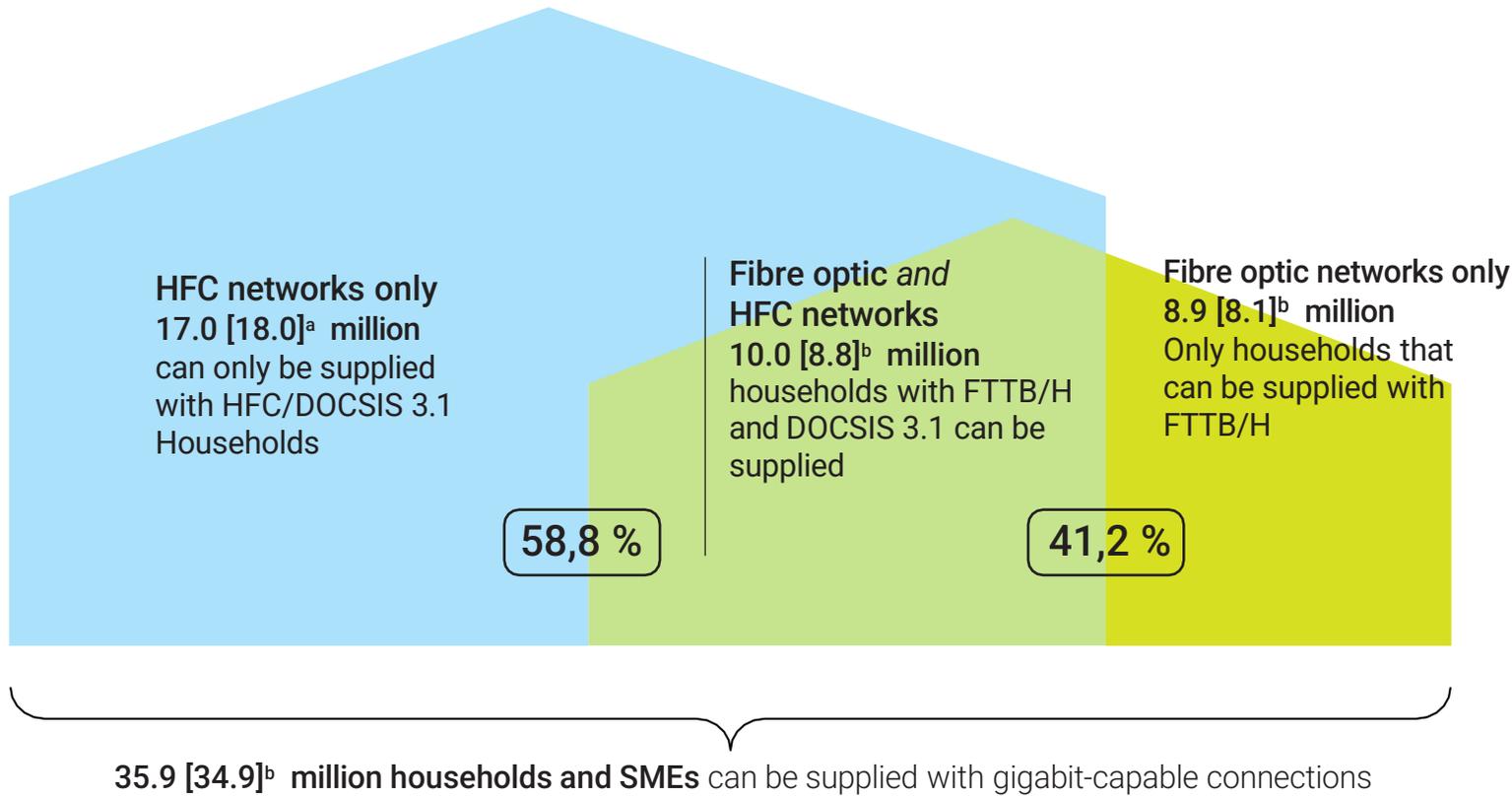
#Wettbewerberbindet

Gigabit coverage rate of 78.6 per cent in 2024 is only 2.2 percentage points above the previous year's rate



Fig. 5: Households/SMEs supplied with gigabit-capable connections in mid-2024
 (Homes Passed^a, in each case at the (half) year-end, estimate for the end of June 2024)

#Wettbewerbsverbindet



Gigabit coverage rate = 78.6 [76.4] % of all 45.7^c million private households/SMEs)^c

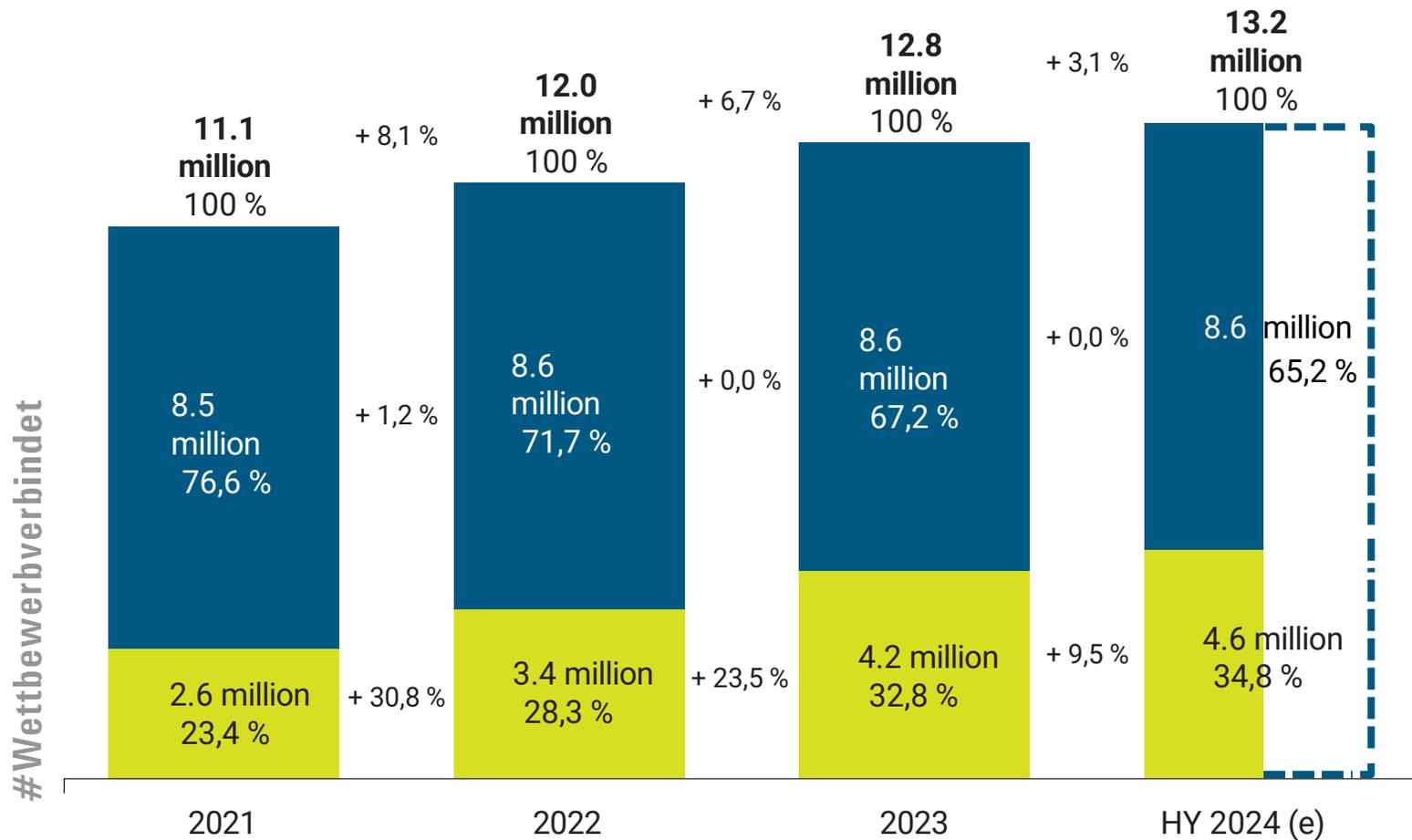
- a) For the definition of Homes Passed, see Fig. 2.
- b) Figures in square brackets = values for the end of 2023.
- c) 45.7 [45.7] million to supplying units. See appendix for details.

Chapter III.
Gigabit demand

#Wettbewerbverbindet

Of the 35.9 million households/SMEs that can be supplied, 13.2 million use gigabit-capable connections (Homes Activated) – almost two thirds of customers use HFC connections

Fig. 6: Demand for gigabit-capable broadband connections by technology (Homes Activated^a, in each case at the (half) year-end)

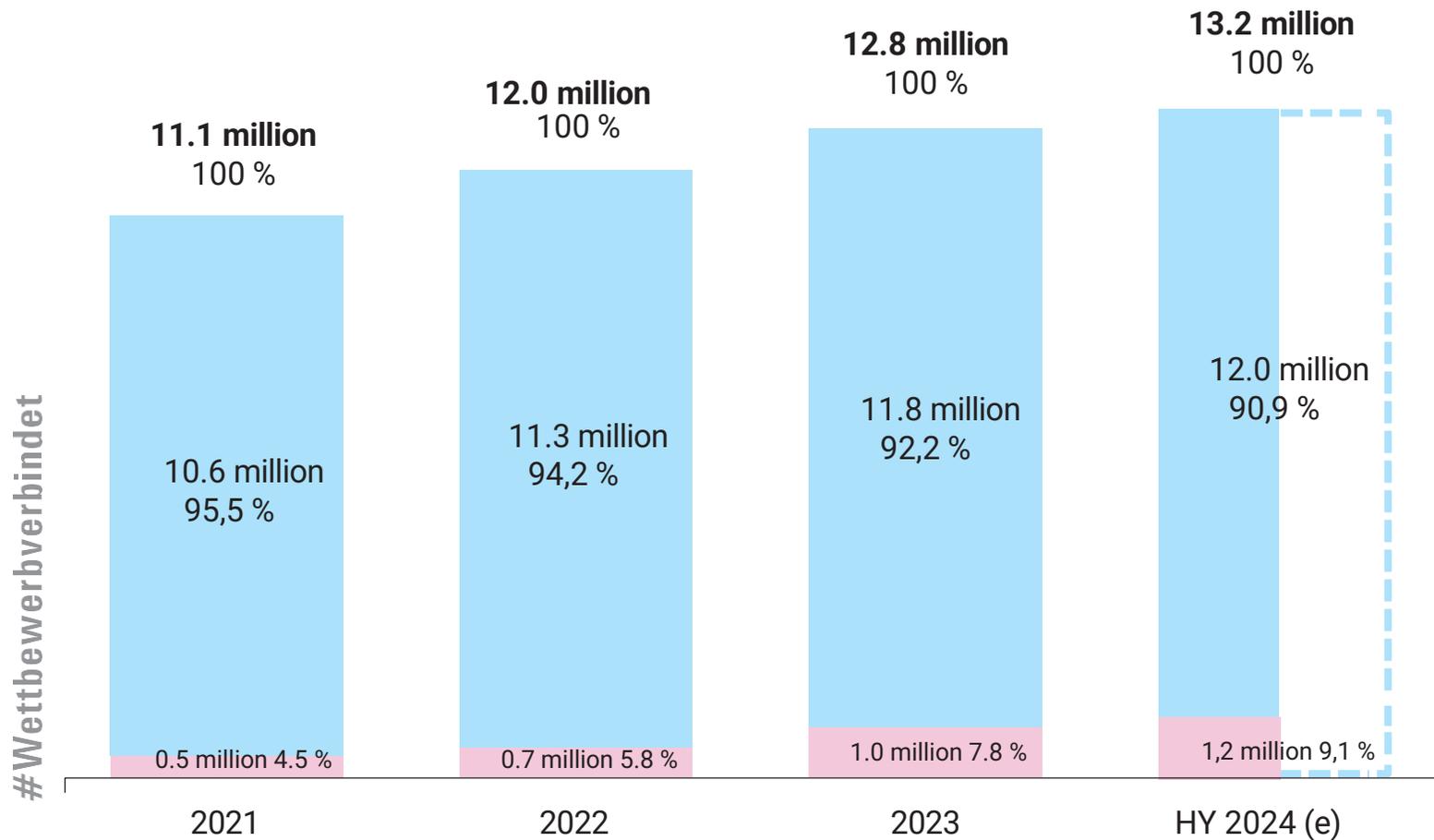


- HFC with DOCSIS 3.1
- FTTB/H

a) For the definition of Homes Activated, see Fig. 2. Figures between the columns = (semi-) annual growth rate of the segment.

90.9 per cent of gigabit contract customers (Homes Activated) obtain this from competitor companies

Fig. 7: Demand for gigabit-capable connections by provider (Homes Activated^a, in each case at the (half) year-end)



- Competitors
- Telekom Deutschland

a) Definition of the Homes Activated s. Fig. 2.

Figures between the columns = (semi-) annual growth rate of the segment or absolute growth.

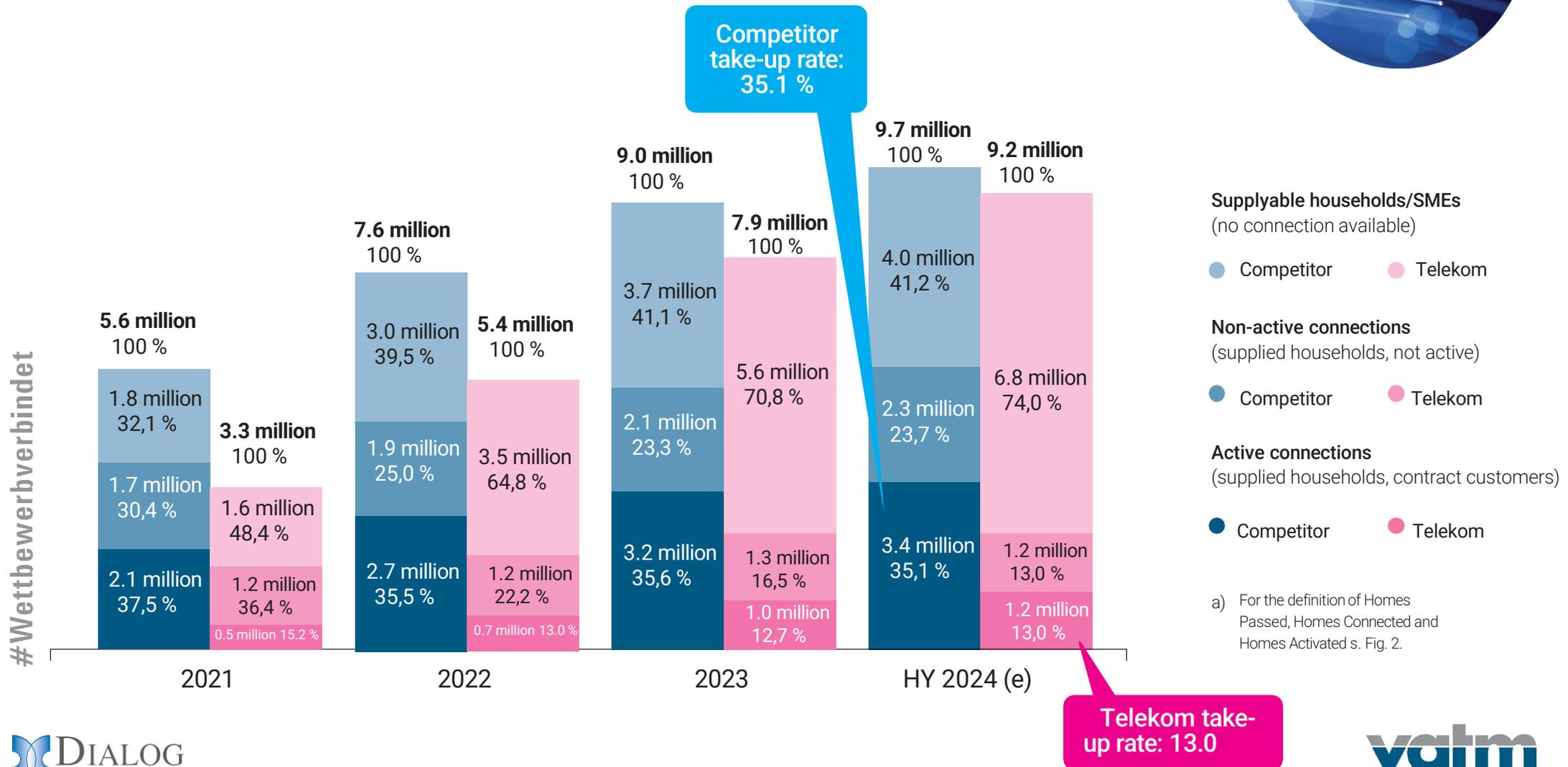
Chapter IV.

Fibre optic supply and demand

#Wettbewerbverbindet

The competitor companies have more than twice as many lines ready for operation compared to Telekom

Fig. 8: Households supplied, supplied and activated with fibre optics^a by provider
 (Homes Passed, Homes Connected and Homes Activated, estimate for Telekom HC, in each case at the (half) year end)



a) For the definition of Homes Passed, Homes Connected and Homes Activated s. Fig. 2.

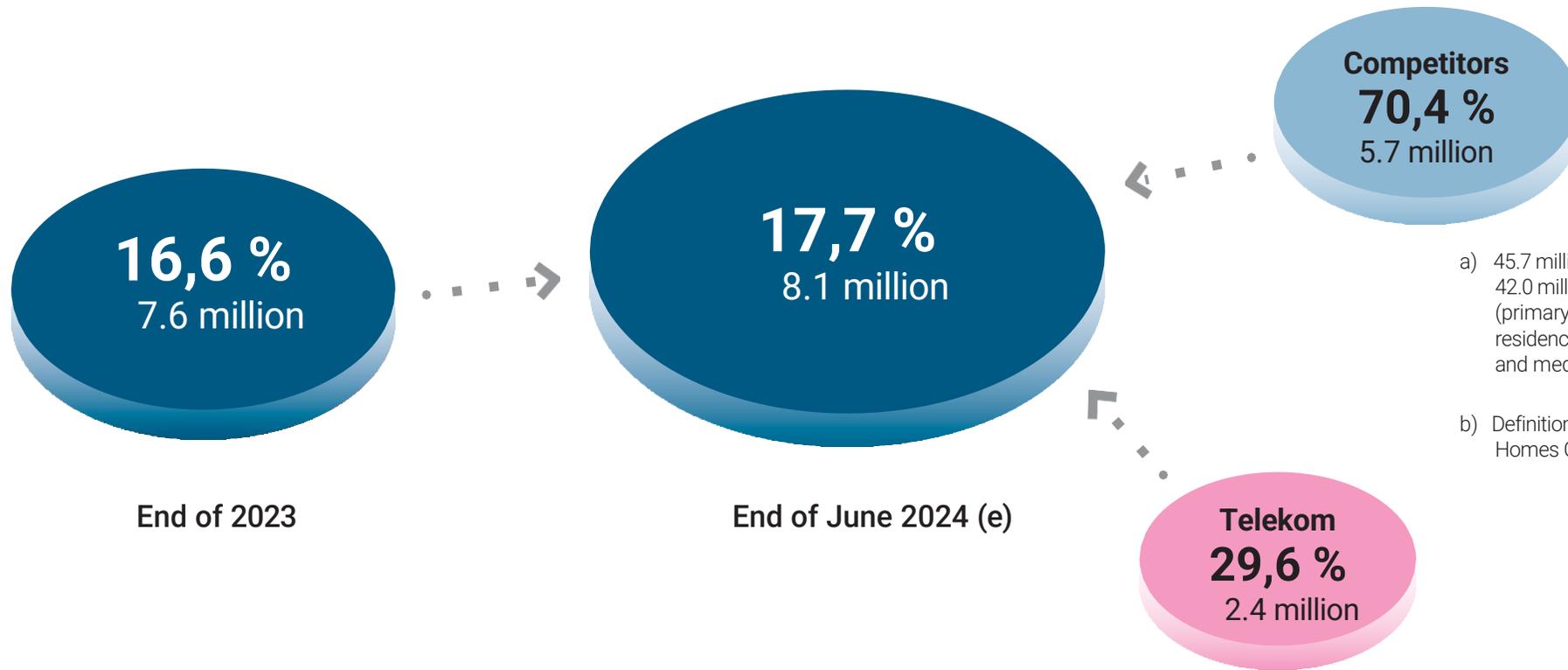
#Wettbewerberbindet

Homes Connected: competitors account for 70.4 per cent of the 17.7 per cent fibre-optic coverage rate

Fig. 9: Fibre optic coverage rate Homes Connected^a
(in each case at the (half) year-end)



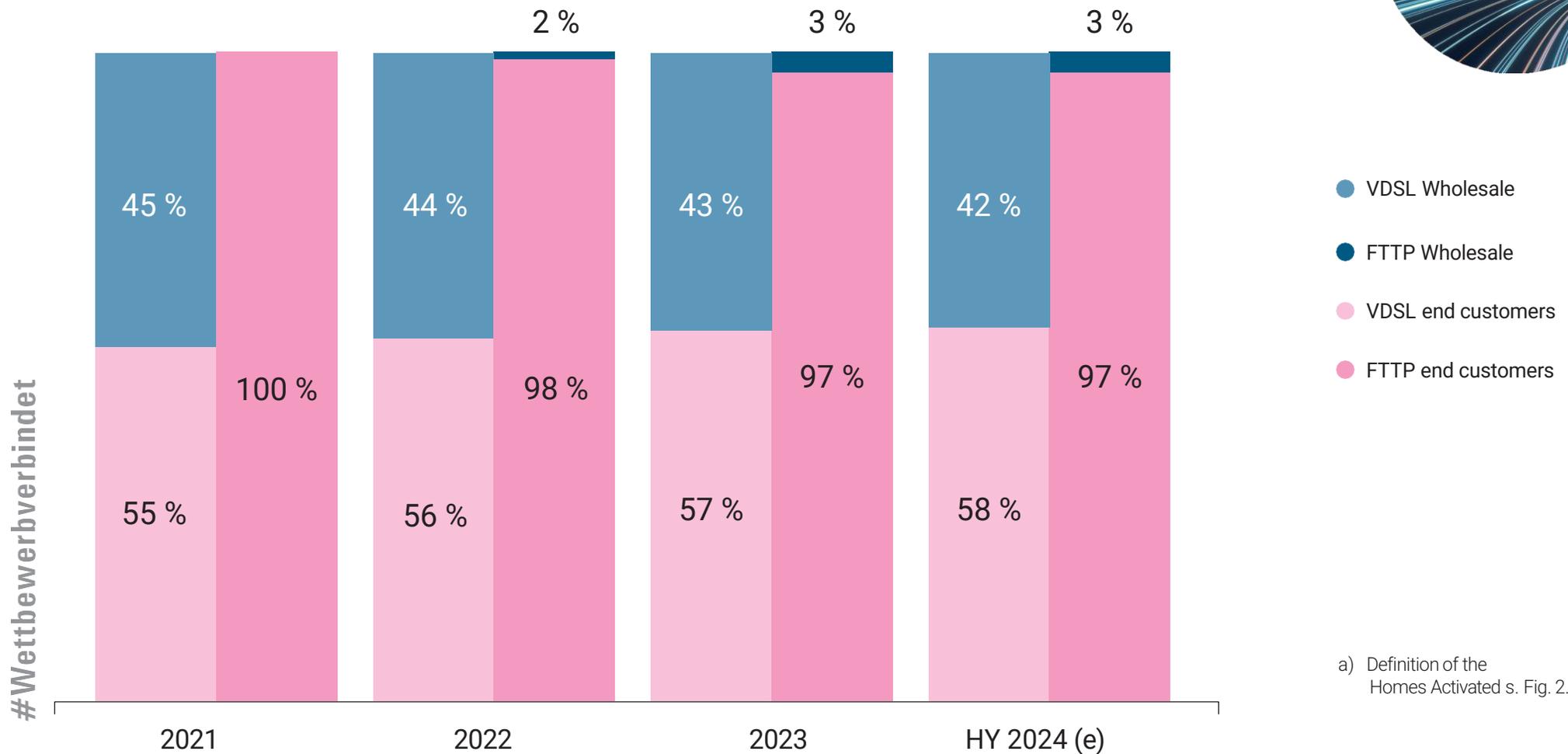
#Wettbewerbindet



- a) 45.7 million units to be supplied. 42.0 million private households (primary and secondary residences) and 3.7 million small and medium-sized enterprises.
- b) Definition of Homes Connected s. Fig. 2.

Telekom succeeds in remonopolising the FTTH access network – regulation light does not apply

Fig. 10: End customer market shares^a on the Telekom FTTH and FTTC access network
(Homes Activated, in each case at the (half) year-end)



a) Definition of the Homes Activated s. Fig. 2.

Chapter V.

Bandwidth and data volume

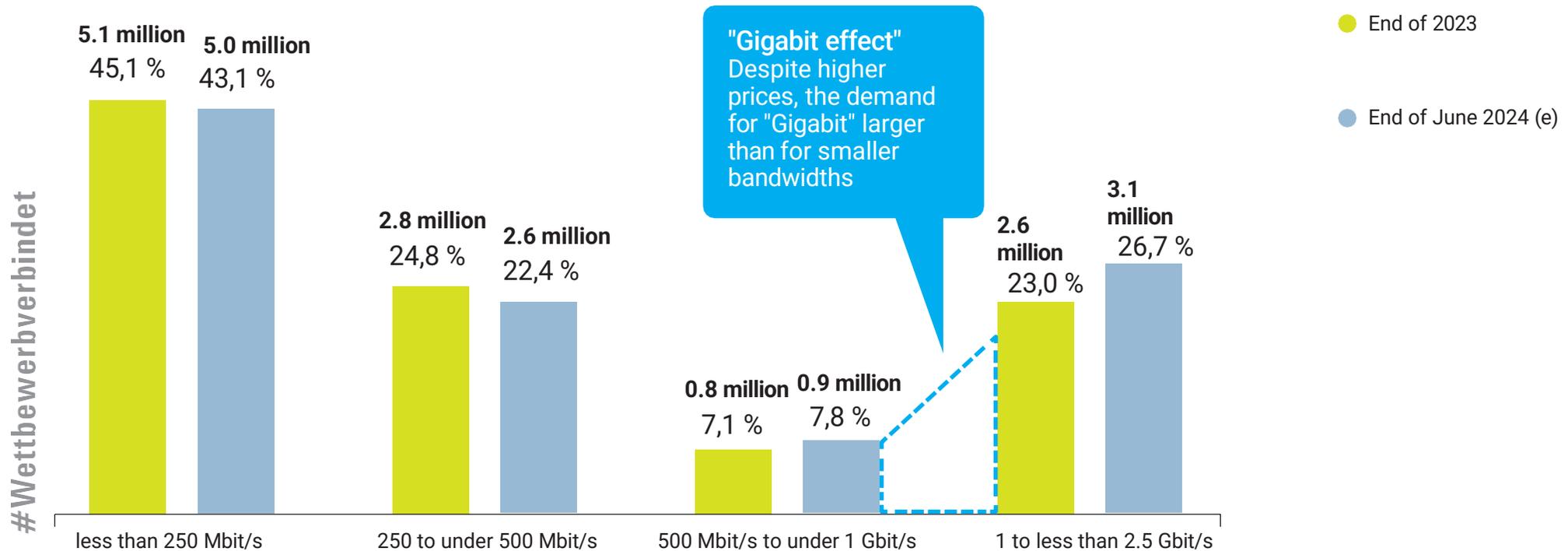
#Wettbewerbverbindet

Over half of customers demand bandwidths of 250 Mbit/s and more – Gigabit bandwidths are now particularly attractive to customers

Fig. 11: Distribution of demand for gigabit-capable connections by bandwidth class (in each case at the (half) year-end)

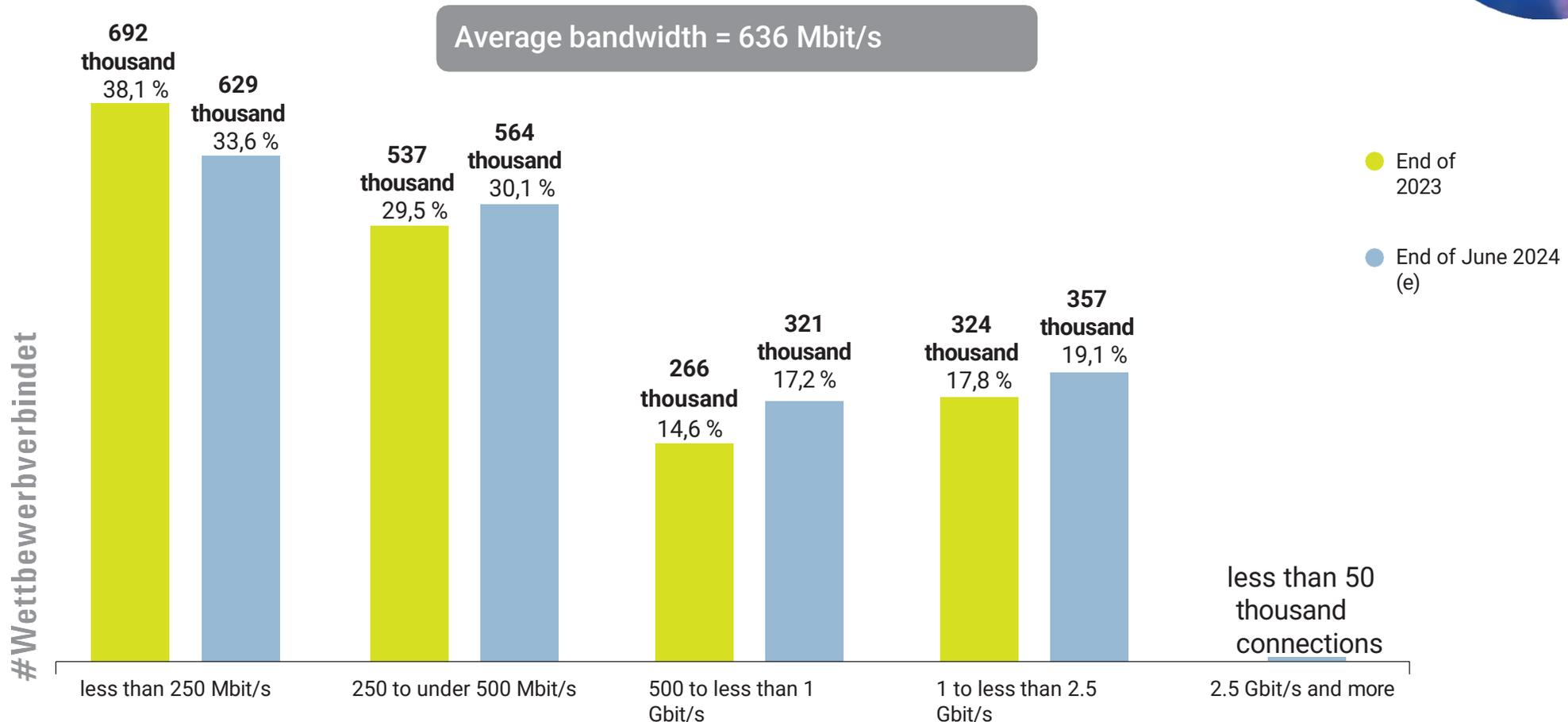


Average bandwidth = 485 Mbit/s



In the business customer segment, over 42 per cent of customers demand bandwidths of 500 Mbit/s and more – over 21 per cent even demand bandwidths of 1 Gbit/s and more

Fig. 12: Distribution of demand for gigabit-capable connections by bandwidth class for business customers (in each case at the (half) year-end)

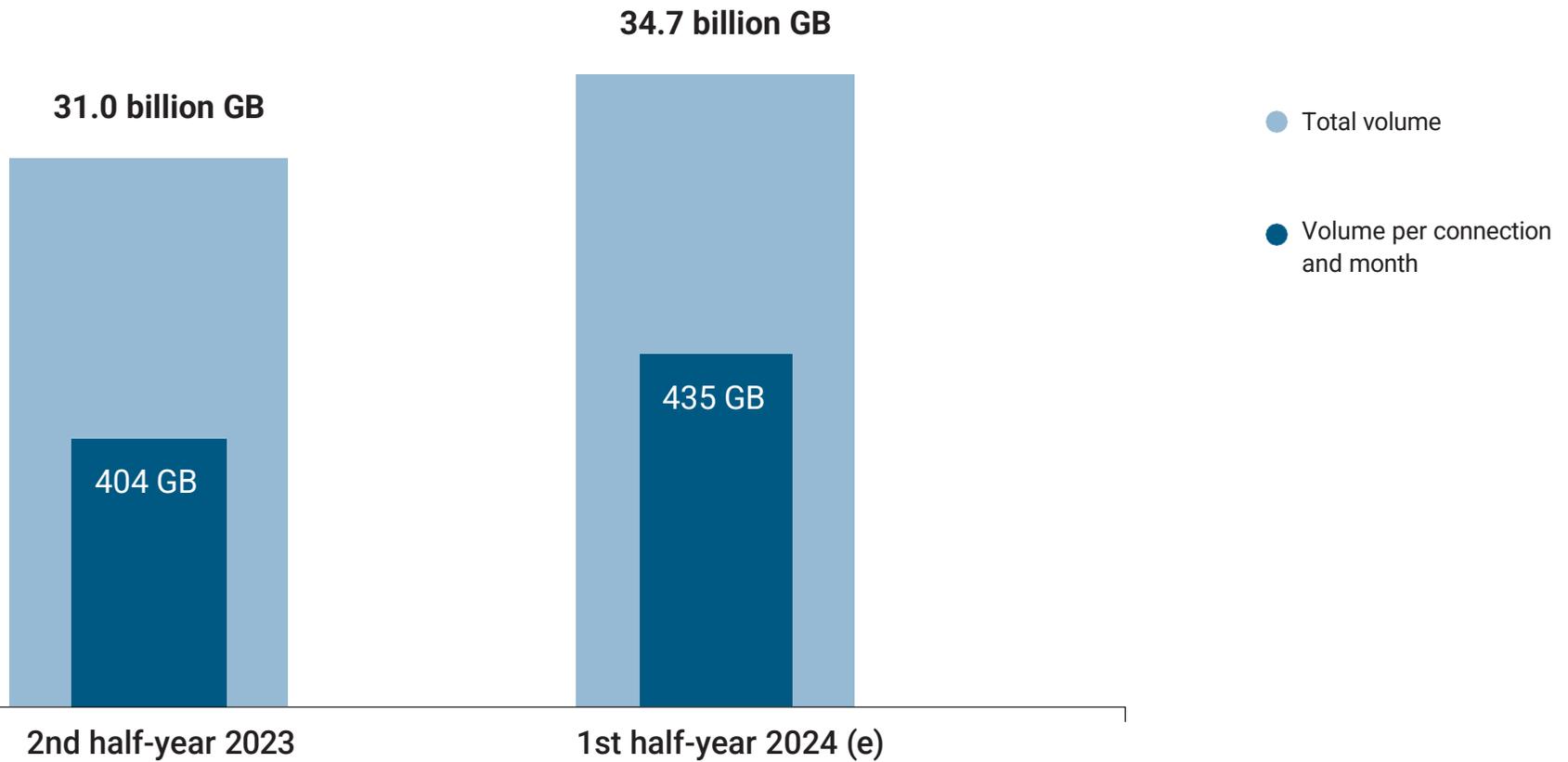


The data volume generated via gigabit-capable connections averages 435 gigabytes per connection and month and grew by a good 7 per cent in the first half of 2023 alone

Fig. 13: Data volume gigabit connections



#Wettbewerbverbindet

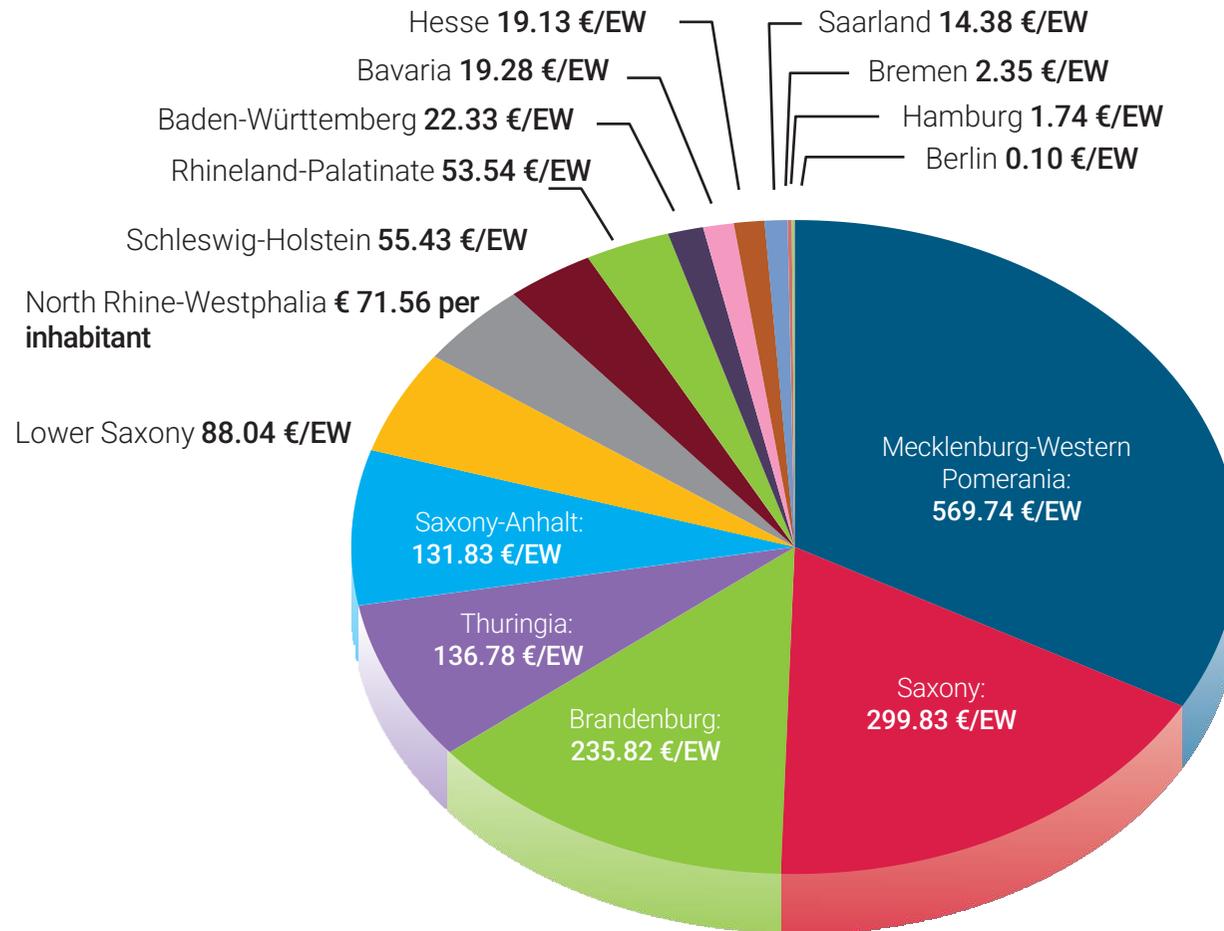


Chapter VI.

Fibre optic funding from the German federal government

FTTB/H projects in the five eastern German states excluding Berlin receive about four-fifths of the BMDV's funding for fibre optic expansion per inhabitant

Fig. 14: Broadband funding from the BMDV by federal state and per inhabitant
 (Grant in euros for finally approved funding projects per inhabitant)

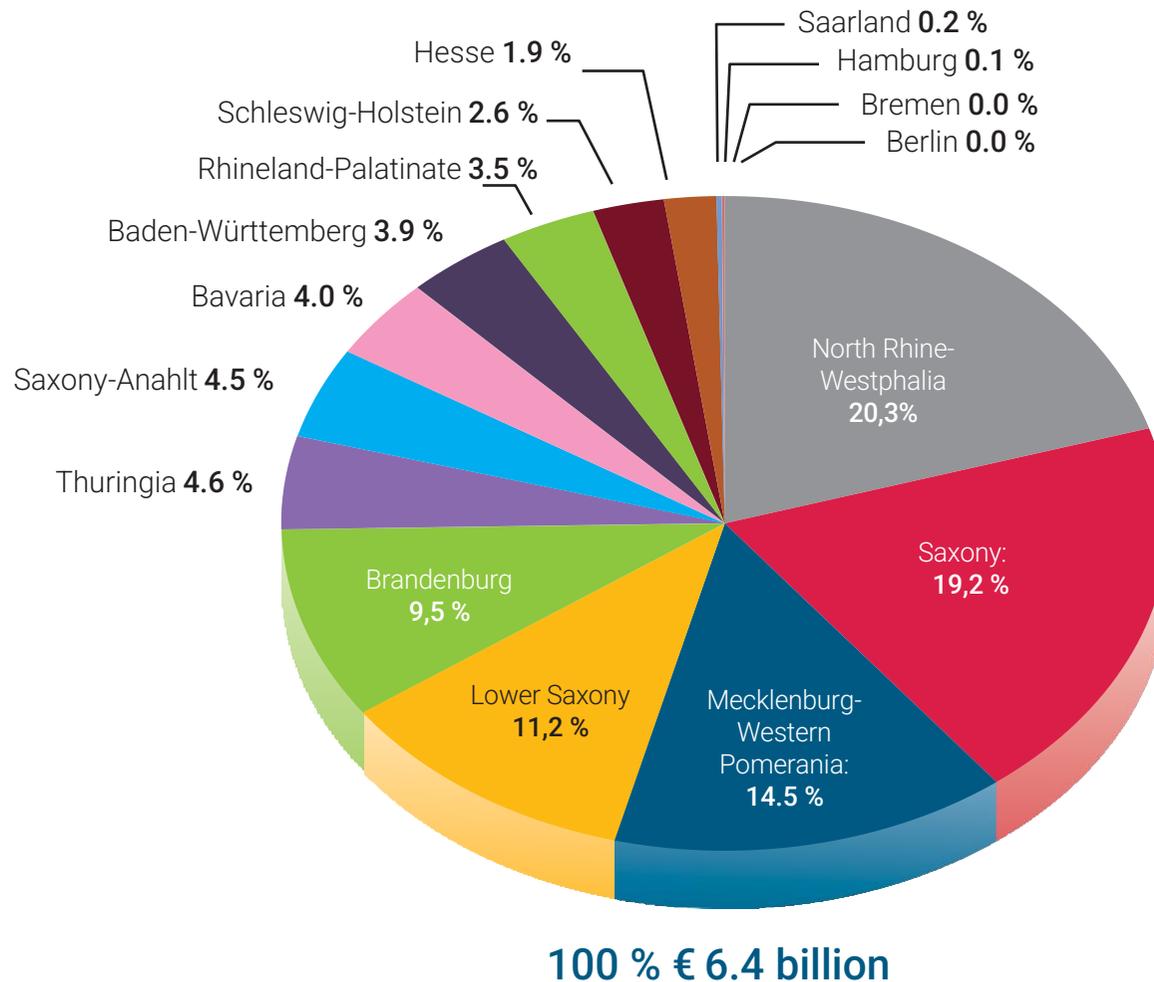


#Wettbewerbverbindet

a) Status: 22/03/2024. 1,278 funding projects in total, some of which were awarded to several applicants. In the case of awards to several applicants, these were distributed equally according to the number of lots received.

FTTB/H projects in Brandenburg, Mecklenburg-Western Pomerania, Lower Saxony, North Rhine-Westphalia and Saxony receive around three quarters of the BMDV's funding for fibre optic expansion

Fig. 15: Broadband funding from the BMDV by federal state and by grant
 (Share of grant for finally approved funding projects in euros)

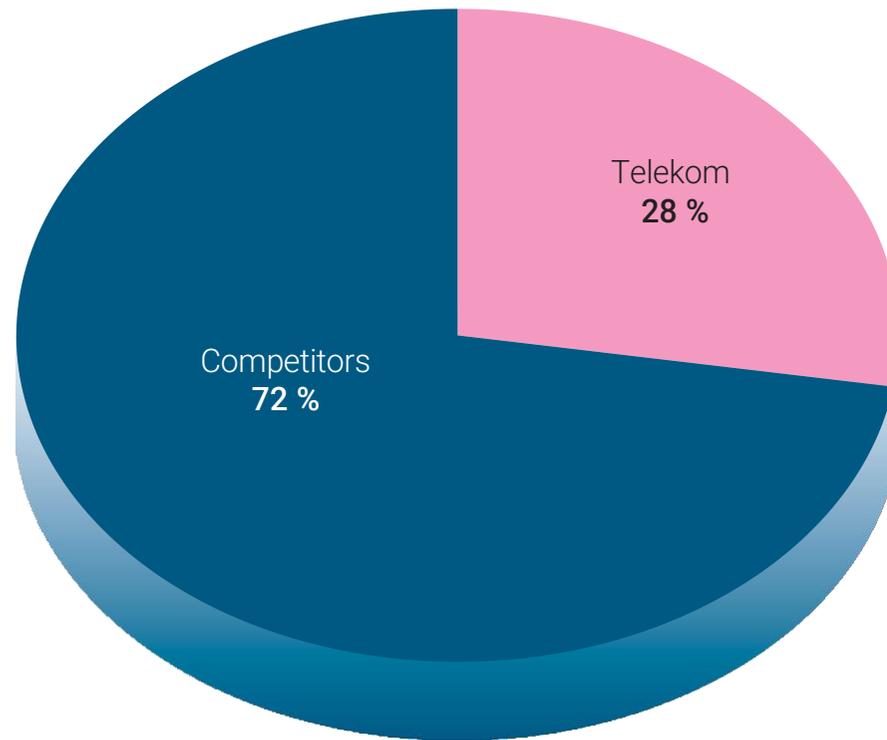


a) Status: 22/03/2024. 1,278 funding projects in total, some of which were awarded to several applicants. In the case of awards to several applicants, these were distributed equally according to the number of lots received.

#Wettbewerbverbindet

Competitors build by far the most in areas that are difficult to supply

Fig. 16: Broadband funding from the BMDV by expanding company
(Grant in euros for finally approved funding projects)



100 % € 6.4 billion

a) Status: 22/03/2024. 1,278 funding projects in total, some of which were awarded to several applicants. In the case of awards to several applicants, these were distributed equally according to the number of lots received.

#Wettbewerbverbindet

Chapter VII.
Outlook for 2024

#Wettbewerbverbindet

Outlook for the end of 2024

- By the end of 2024, around 80 per cent of households and SMEs will be connected to a gigabit network. be achievable. The number of 45.7 million households and SMEs in Germany that can be reached with gigabit networks will be around 48-49 million by the end of 2024, taking double counting into account
- The number of FTTB/H connections in Germany will be 8.5 - 9.0 million by the end of 2024 (Homes Connected). The fibre optic coverage rate will increase to 18.5 - 19.0% by the end of 2024
- By the end of 2024, over 5 million households will be actively using FTTB/H fibre optic connections. This corresponds to 57 per cent of households and SMEs with FTTB/H connections (Homes Connected).
- The volume of data transmitted via gigabit connections will increase to over 460 gigabytes per connection in the second half of 2024

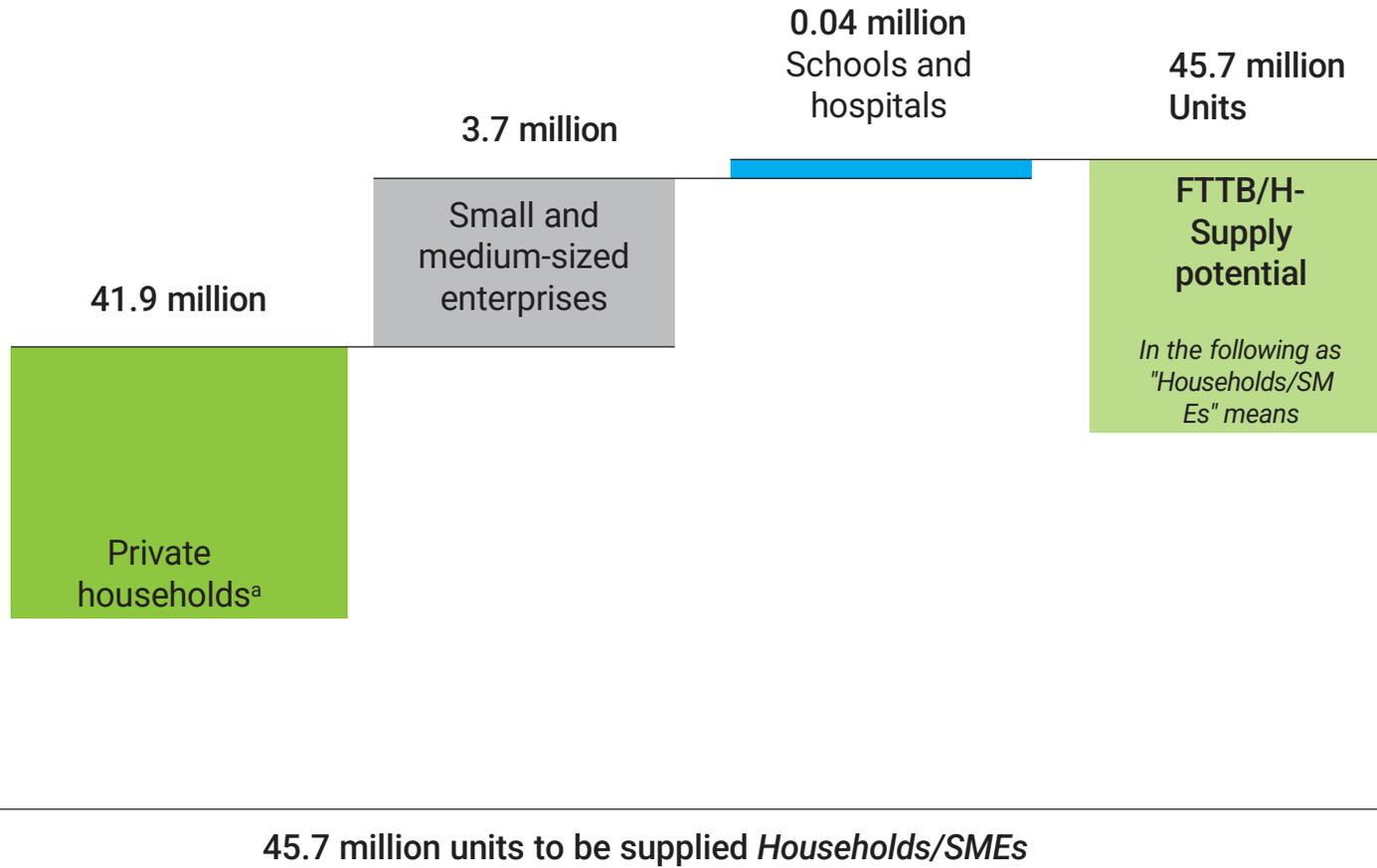
Appendix

#Wettbewerbverbindet



FTTB/H coverage potential

#Wettbewerbsverbindet



a) Main residence und Secondary residences.

List of abbreviations

ANGA	ANGA The Broadband Association e.V.	HFC	Hybrid fibre coax
BMDV	Federal Ministry for Digital and Transport Affairs	SME	Small and medium-sized enterprises
BNetzA	Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railway	L2 BSA	Layer 2 BitstreamAccess
BWA	Broadband Wireless Access	LTE	Long Term Evolution M2M Machine-to-Machine
DOCSIS	Data Over Cable Service Interface Specification	Mbit	Megabit
e	estimated	Million	million
EU	European Union	Billion	Billion
EW	residents	VAT	Value added tax
FTTC	Fibre-to-the-Curb	sq.km.	square kilometre
FTTB	Fibre-to-the-Building	s	second
FTTH	Fibre-to-the-Home	VDSL	Very High Speed Digital Subscriber Line
GB	Gigabyte		
Gbit	Gigabit		