

BÖCKER ZIEMEN

BREKO
Bundesverband
Breitbandkommunikation e.V.

BREKO Market Study 2023

Bonn, Germany, 30 August 2023
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Management Summary



BREKO Market Study 2023 shows:

- The fibre roll-out in Germany remains on track, despite numerous challenges: With a fibre-availability of 35.6% as of 30 June 2023, more than a third of all households and businesses have access.
- Alternative network operators support Germany as a business location: investments by Deutsche Telekom's competitors with 8.4 billion euro at highest level ever (64% of total investments).
- 223 municipalities are affected by duplication of fibre networks. This could jeopardize the roll-out targets of the German Government. Existing open access agreements demonstrate a functioning alternative to building parallel fibre networks.
- In a comparison of the federal states, Schleswig-Holstein remains the front-runner, Brandenburg has made the most progress, and Baden-Württemberg is at the bottom of the list among the non-city-states.
- Publicly funded fibre projects complement privately funded projects but do not accelerate roll-out overall. Privately funded fibre connections are economically viable for more than 90% of German households.
- Telecommunications companies continue to focus on sustainability measures.





Stichprobe

Survey of 184 network operators in Germany in May and June 2023. Executives (e.g. managing directors) were interviewed.

BREKO Market Study23

- BREKO's market analysis is representative for the German telecommunications and fibre market.
- Validation of the survey results by including additional sources
- There are approx. 270 active telecommunications companies in Germany
- Out of these, 241 are BREKO members
- Based on roll-out figures from all relevant companies involved in the fibre roll-out in Germany



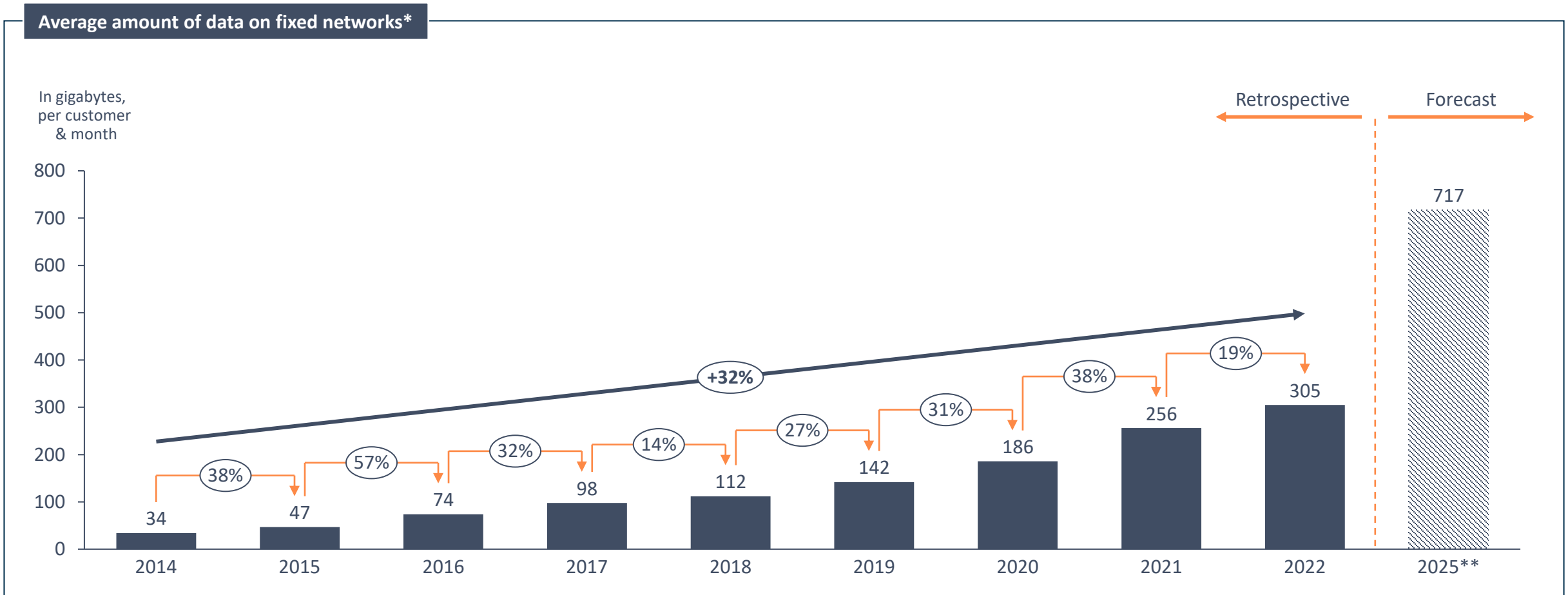
-  1 Telecoms services turnover of network operators in 2022: **€ 59.1 bn**
-  2 Investments by network operators in 2022: **€ 13.1 bn**
-  3 Fibre optic connections (homes passed) by **30 June 2023: 17.3 m**
-  4 Fibre coverage (homes passed) by **30 June 2023: 35.6%**

Market data



Development of the amount of data in fixed networks

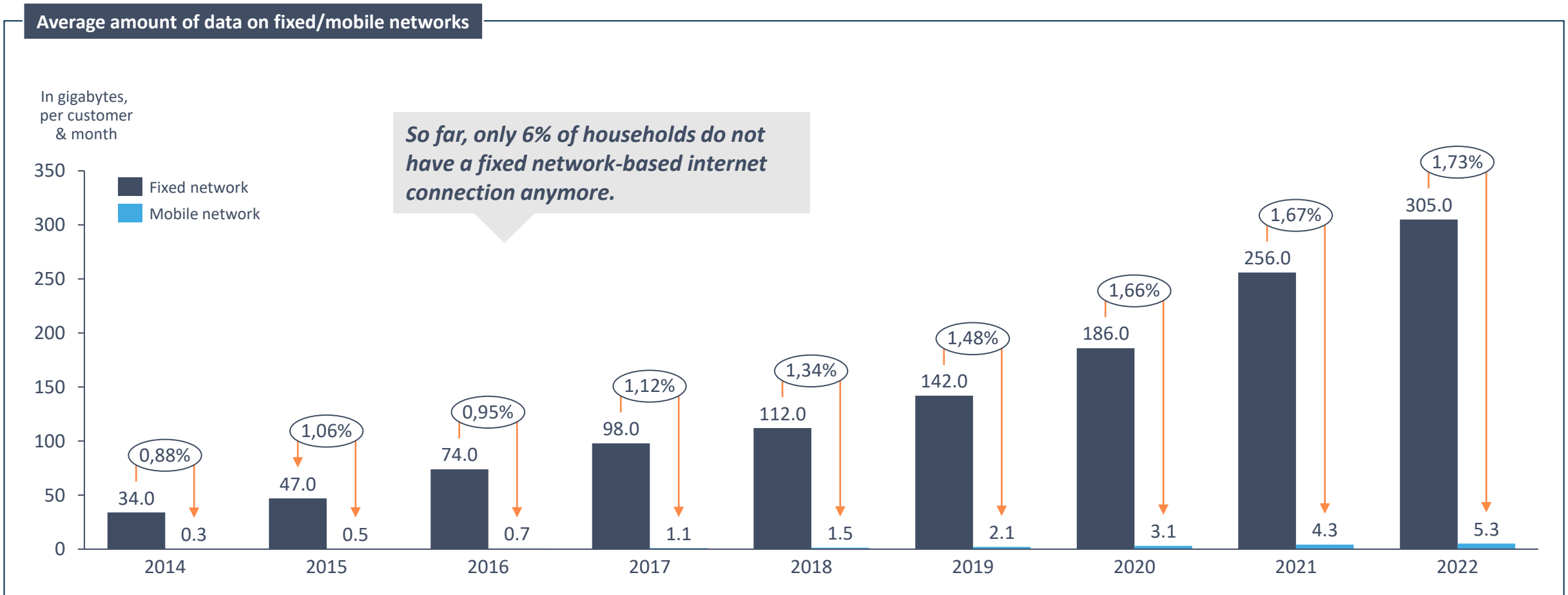
2014 to 2025, the amount of data transferred through fixed networks will grow by an average of 32% per year.



Source: Federal Network Agency, Annual Report 2022, p. 17; *incl. TV and streaming services; ** BREKO forecast.

Ratio of data consumption, mobile vs. fixed networks

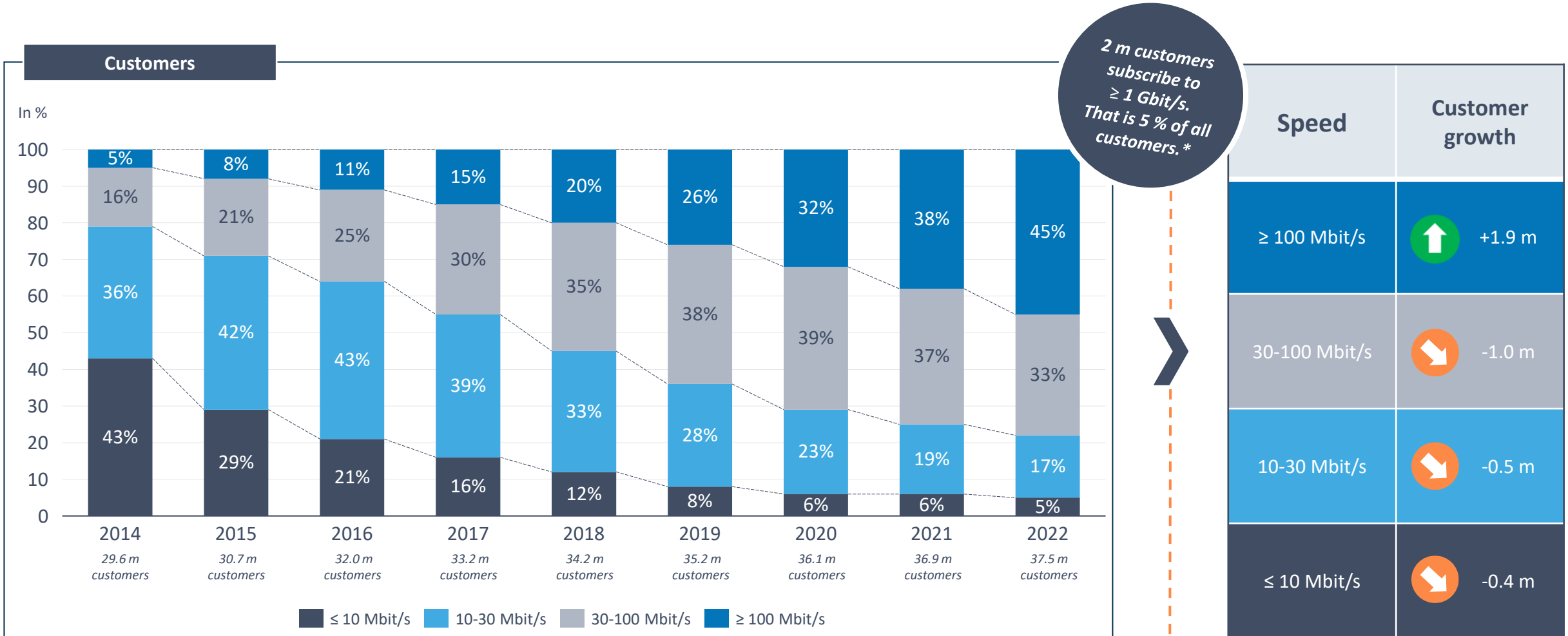
Fixed and mobile networks continue to complement each other – no significant substitution effects are discernible so far. The number of fixed network connections increased by 300,000 over the last three years.



Source: Federal Network Agency, Annual Report 2022, p. 17, p. 19, p. 23.

Distribution of customers by speed subscribed

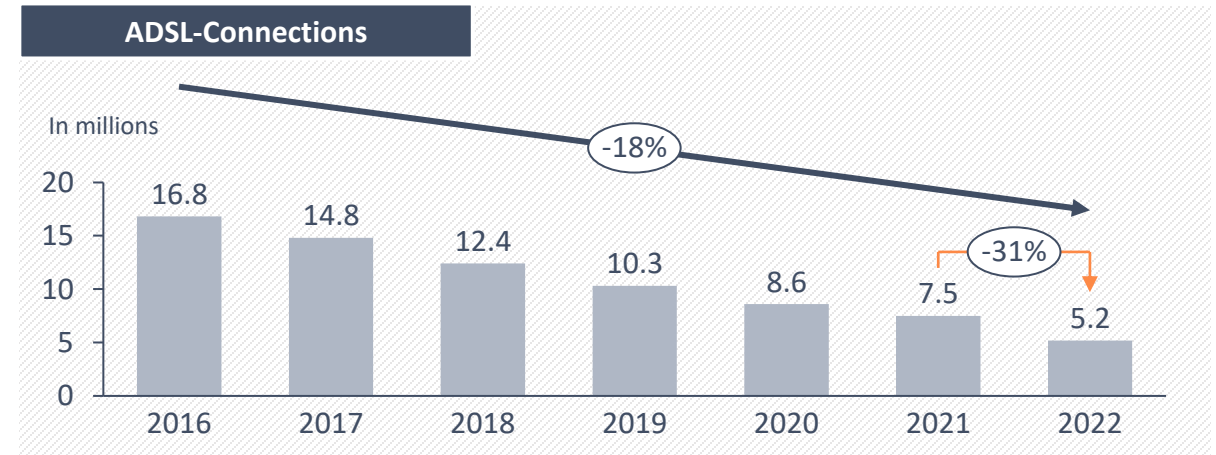
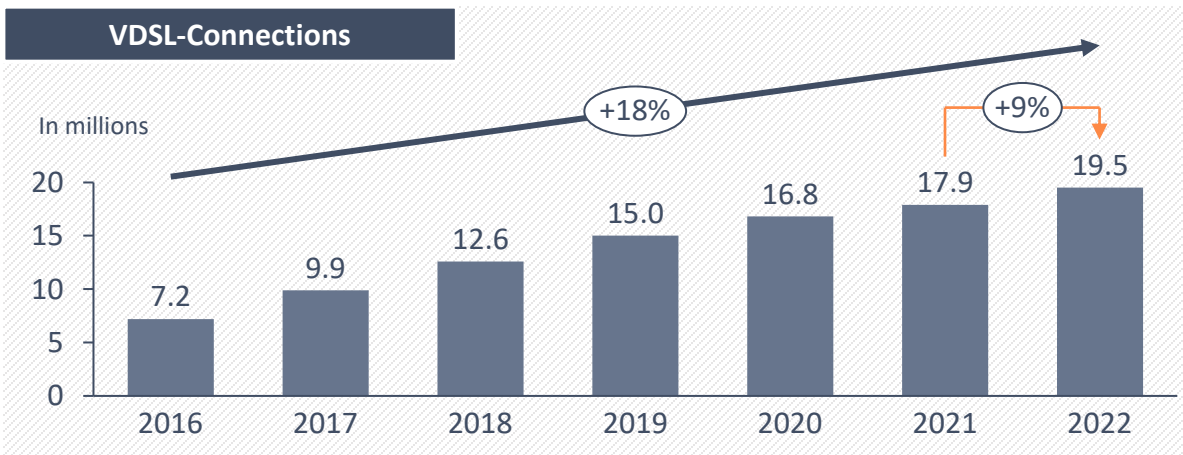
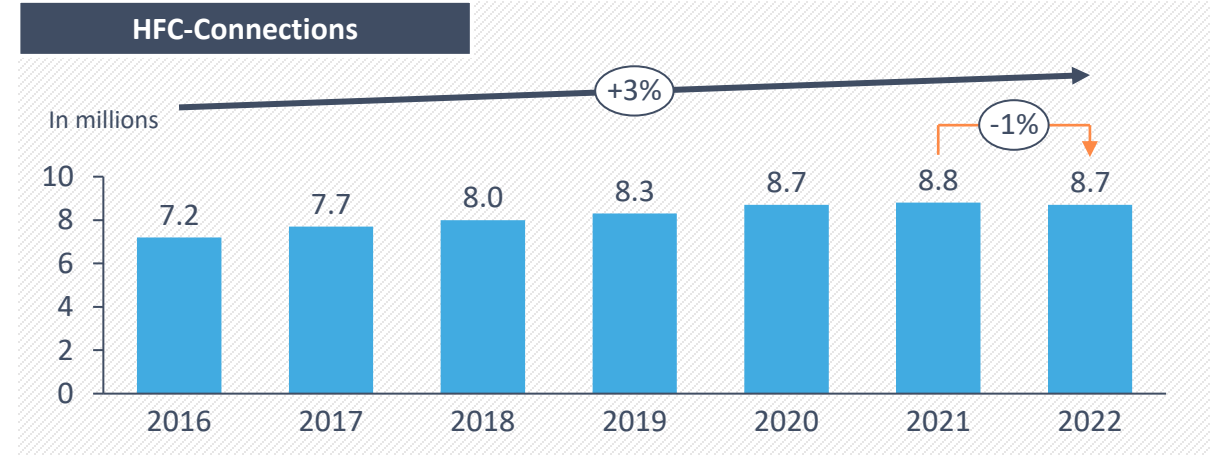
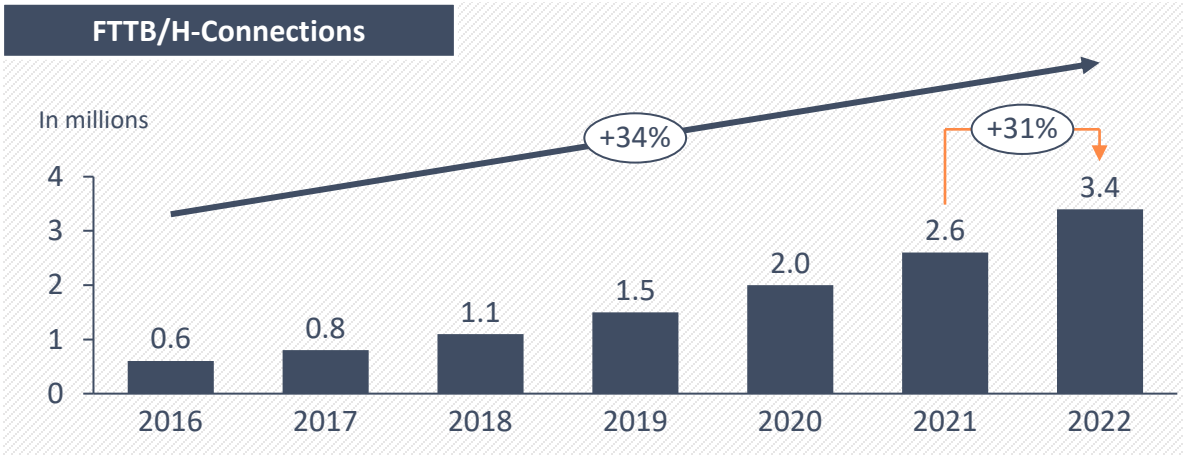
High bandwidths are becoming more important – 45% of customers subscribe to bandwidths ≥ 100 Mbit/s.



Source: Federal Network Agency, Annual Report 2022, p. 12, 13; *For network operators who are members of BREKO the share is 9.6%.

Broadband connections by technology

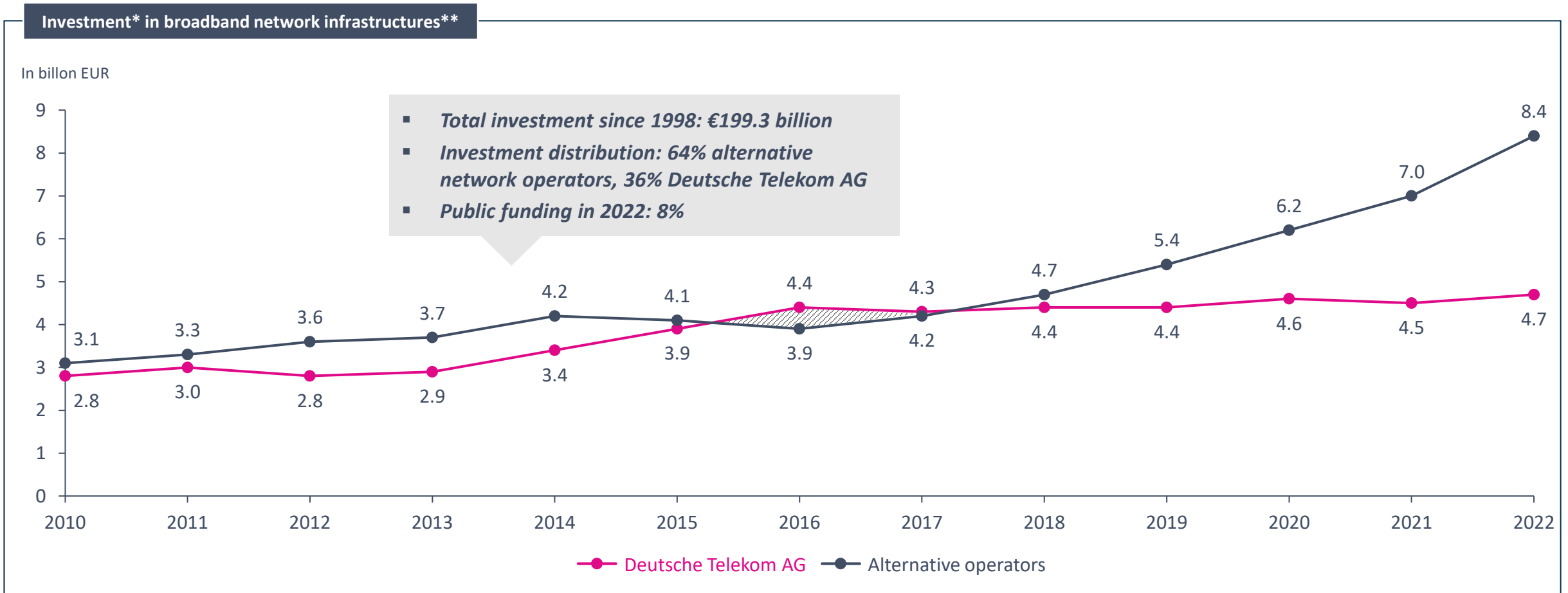
The disproportionate growth in fibre connections continued in 2022. The number of connections via cable networks (HFC) decreased for the first time.



Source: Federal Network Agency, Annual Report 2022, p 14-16; Federal Network Agency, Annual Reports 2016-2021; Differing estimates regarding Homes Activated by different sources.

Total investment in the telecommunications market

Companies invested 13.1 billion EUR in broadband network infrastructure in 2022, more than ever before. The investment share of Deutsche Telekom's competitors rises significantly to a total of 64%.

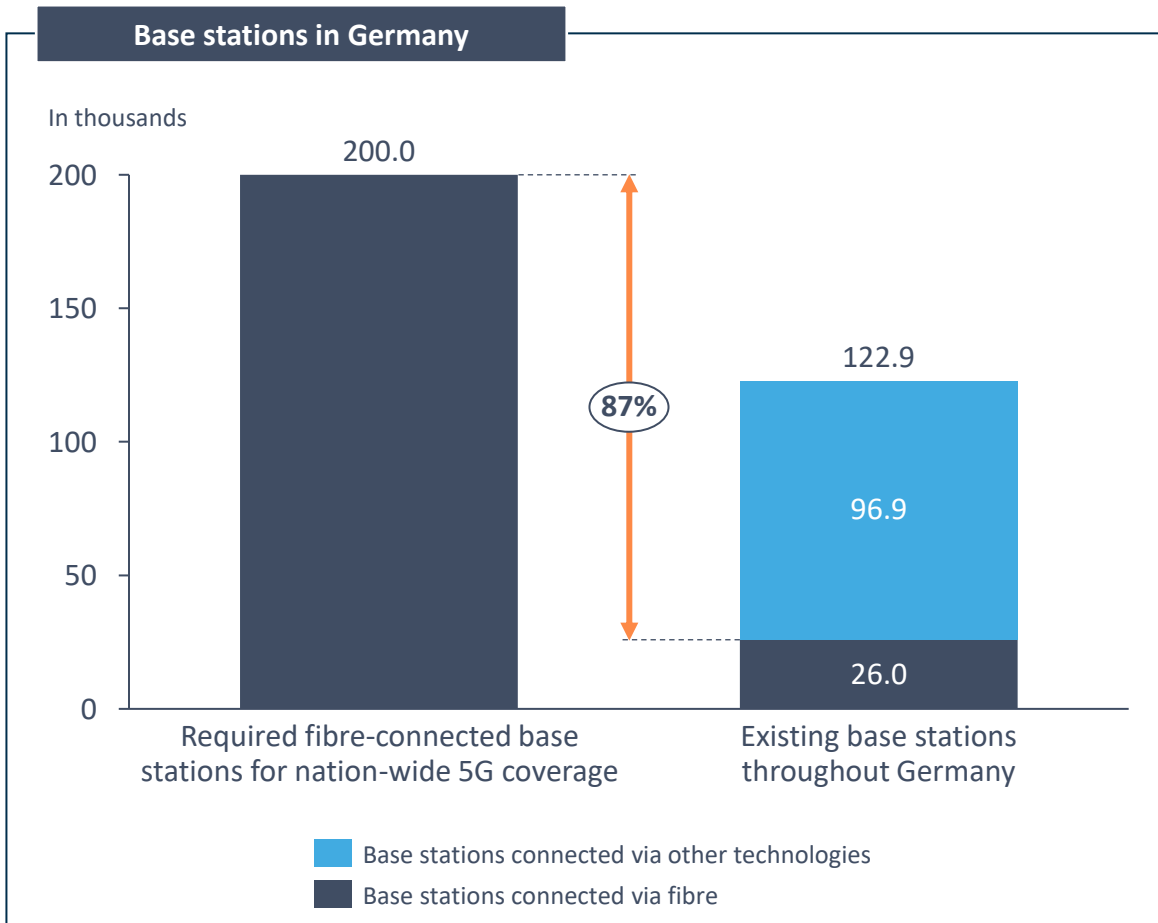


Source: Federal Network Agency, Annual Report 2022, p. 10; BMDV 2023; *incl. public funding; **investments in new and existing broadband network infrastructures (excluding investments in mobile spectrum licenses)

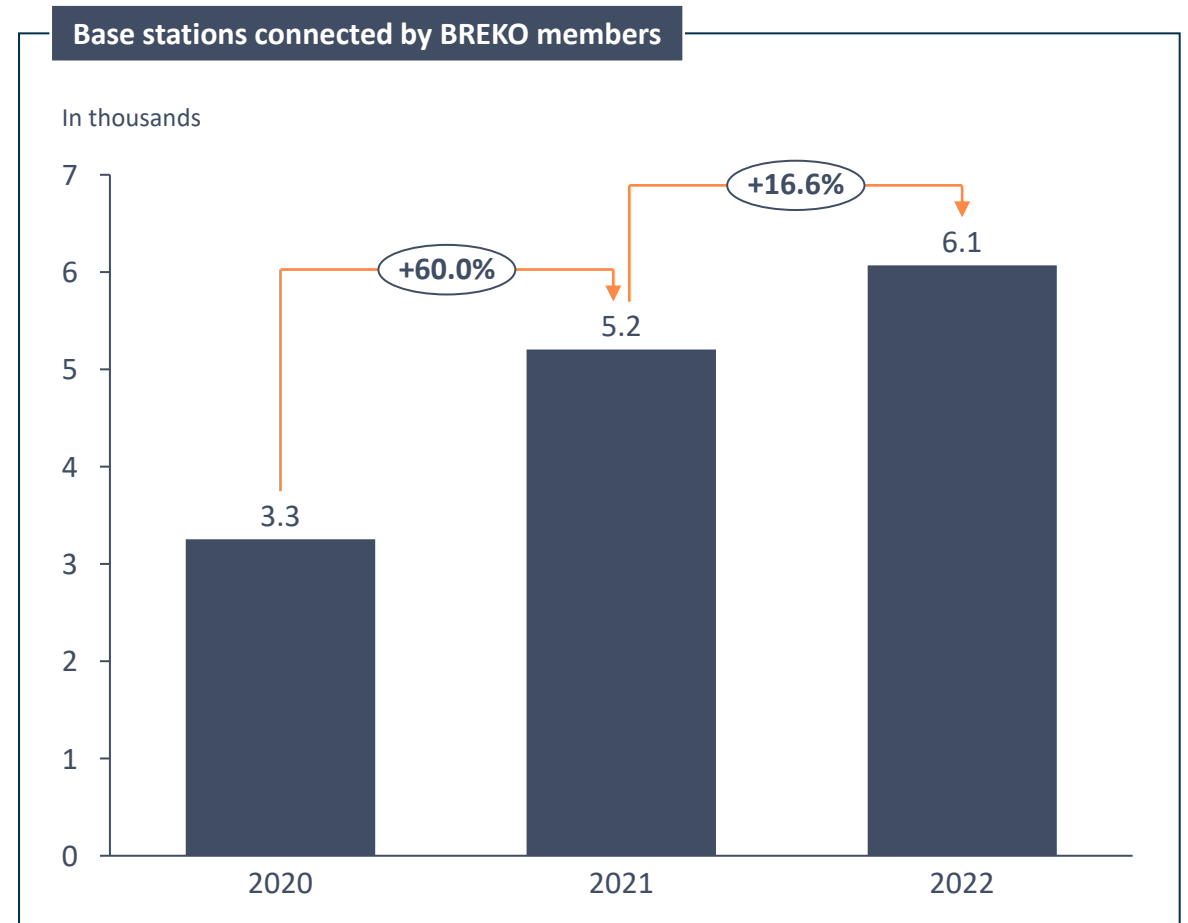
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Fibre backhaul for mobile radio sites

Supplying fibre backhaul for mobile radio sites continues to be an important business segment for fibre network operators. BREKO member companies built almost 25% of all fibre backhauled for base stations.



Source: WIK 2022.



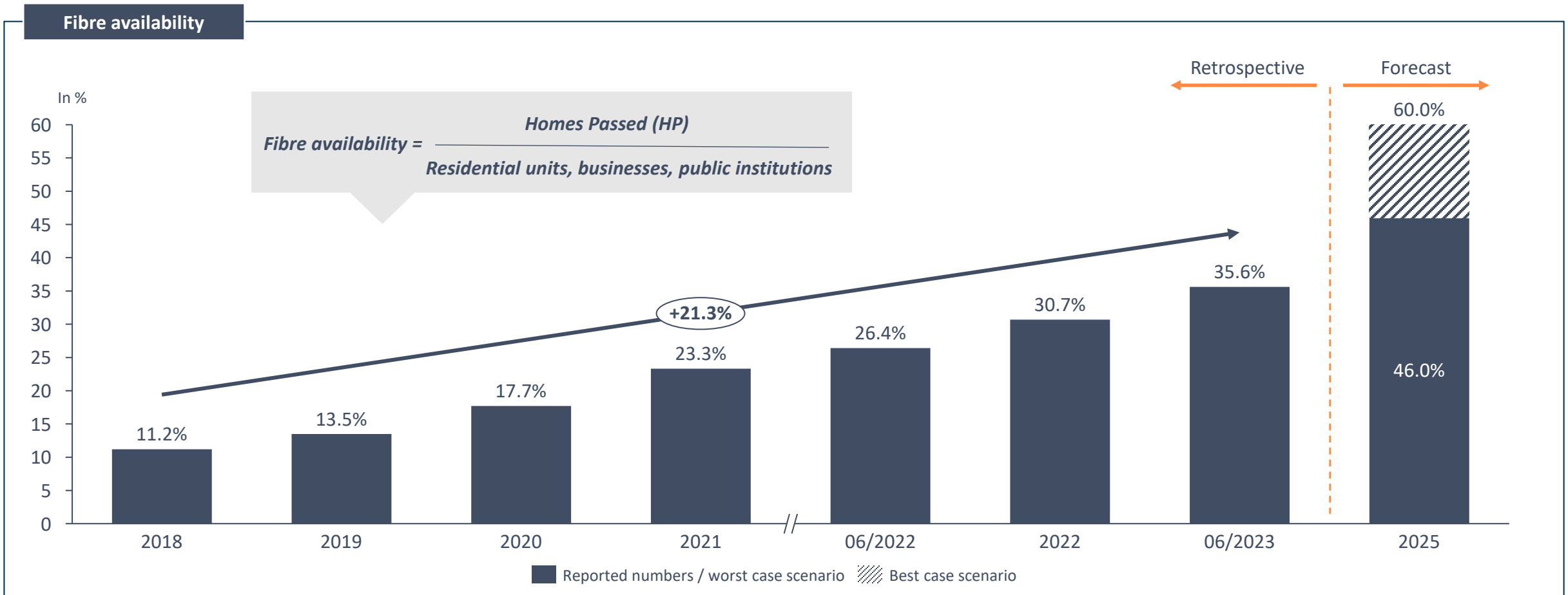
Source: Survey of network operators (n=56)

Fibre development



Fibre availability over time

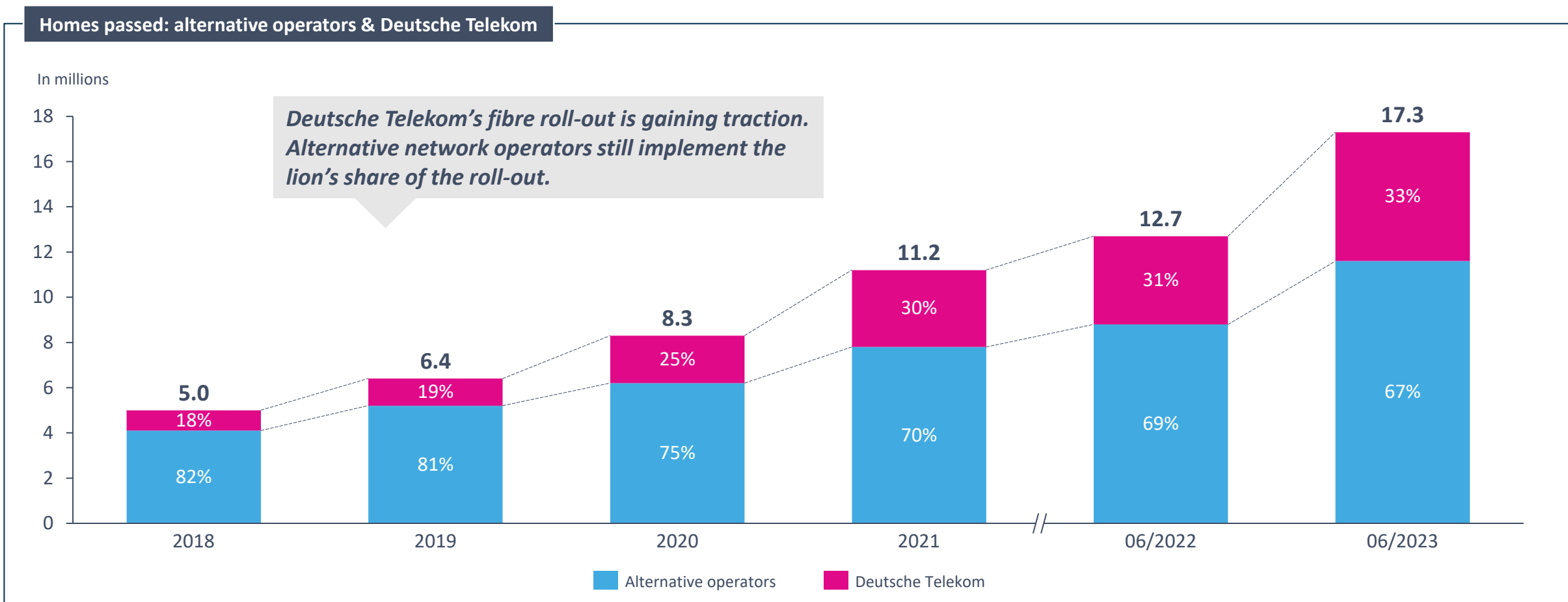
Fibre availability reaches 35.6% as of 30 June 2023, an increase of 9.2 percentage points within 12 months.



Source: survey of network operators (n=178); Federal Network Agency, annual reports 2018-2020; Federal Statistical Office 2023, basis for fibre availability: residential units, businesses, public institutions; figures refer to homes passed, incl. under construction
 Absolute numbers: as of end 2021: 11.2 million homes passed, as of 30 June 2022: 12.7 million homes passed, as of end 2022: 15.0 million homes passed, as of 30 June 2023: 17.3 million homes passed.

Distribution of fibre connections over time

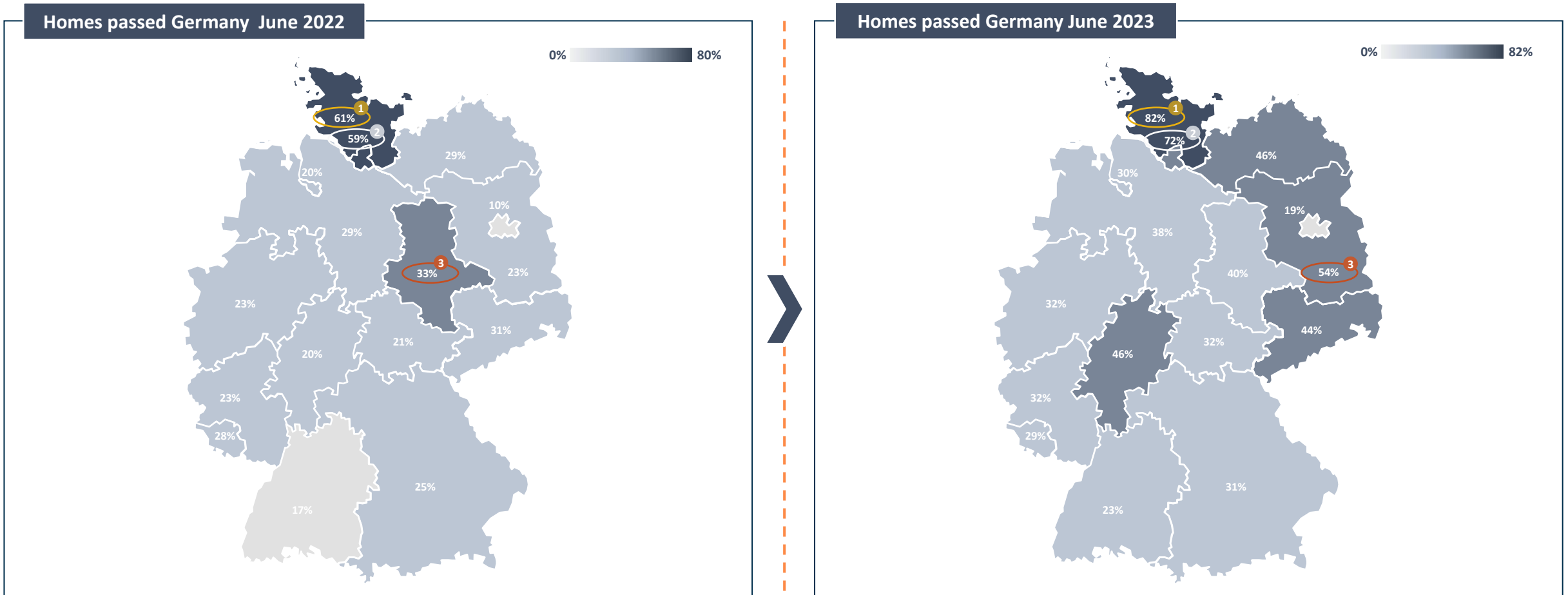
67% of homes passed are built by alternative operators, 33% by Deutsche Telekom.



Source: Survey of network operators (n=178); Deutsche Telekom AG, Q2 2023 results; Breko market analyses 2019-2022.

Federal states in comparison

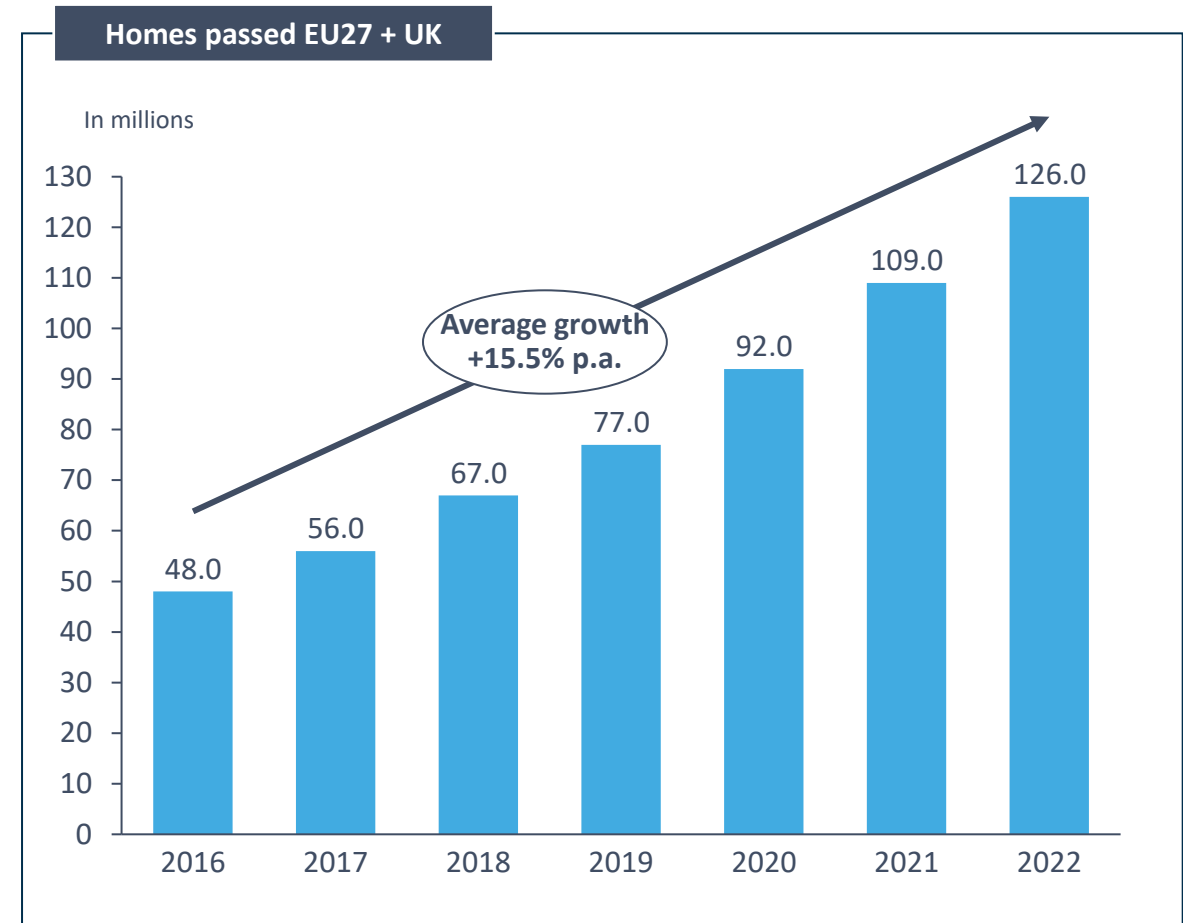
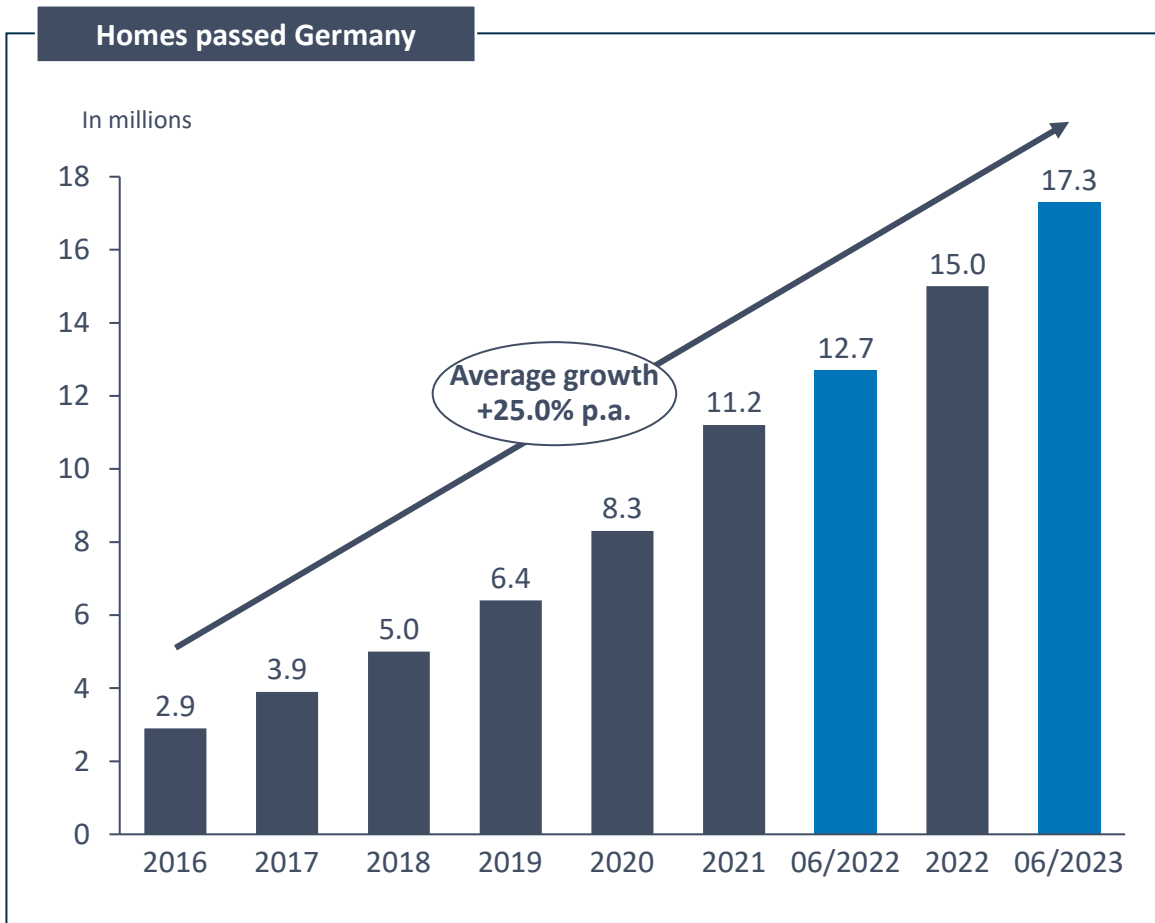
Fibre availability in Schleswig-Holstein remains ahead of the competition; strongest growth in Brandenburg.



Source: Survey of network operators (n=178); Federal Statistical Office 2023; Statista 2023, basis for fibre availability: Residential units, businesses, public institutions

Germany compared to other European countries

Germany's growth rate in fibre availability is disproportionately high.



Source: Survey of network operators (n=178); FTTH Council Europe, FTTH/B Market Panorama 2023.

Risk factors for the fibre roll-out in Germany

Specific risk factors have a significant impact on fibre roll-out in Germany.



Network operators rolling out fibre networks in Germany are facing growing challenges.

Duplication of fibre networks

223 municipalities in 13 federal states are affected by the duplication of fibre networks.

Duplication of fibre networks in Germany

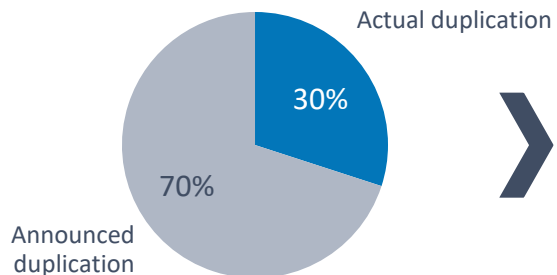


Municipalities affected: **223**



Federal states affected: **13**

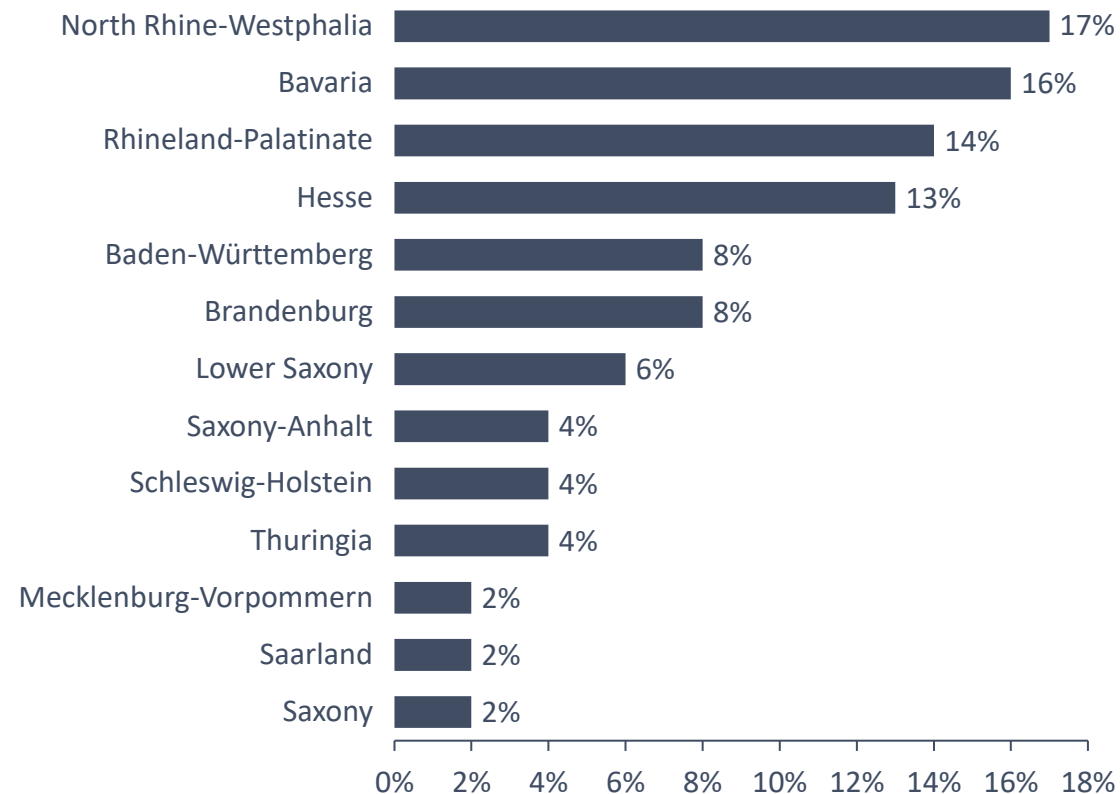
Status of the affected projects



Consequences:

- Withdrawal of the first movers
- Duplication of publicly funded fibre networks

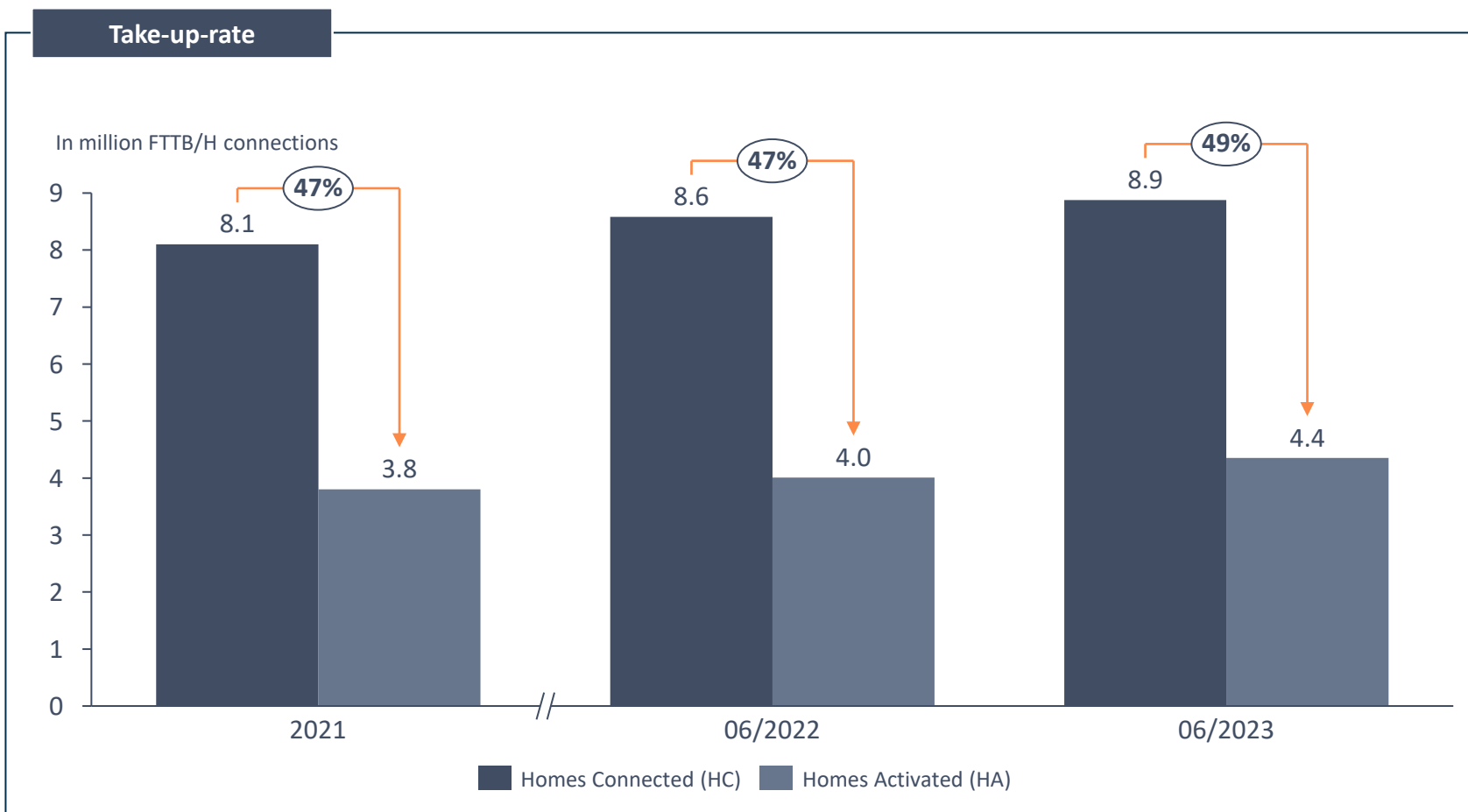
Cases of fibre network duplication by federal states*



Source: Survey of municipalities and BREKO network operators, July 2023. *No reports from the city states of Berlin, Bremen, and Hamburg

Take-up rate for fibre connections

The take-up rate in the fibre market reaches 49%, an increase by 2 percentage points to compared to the previous year.



Source: Survey of network operators (n=157-162).

Implications

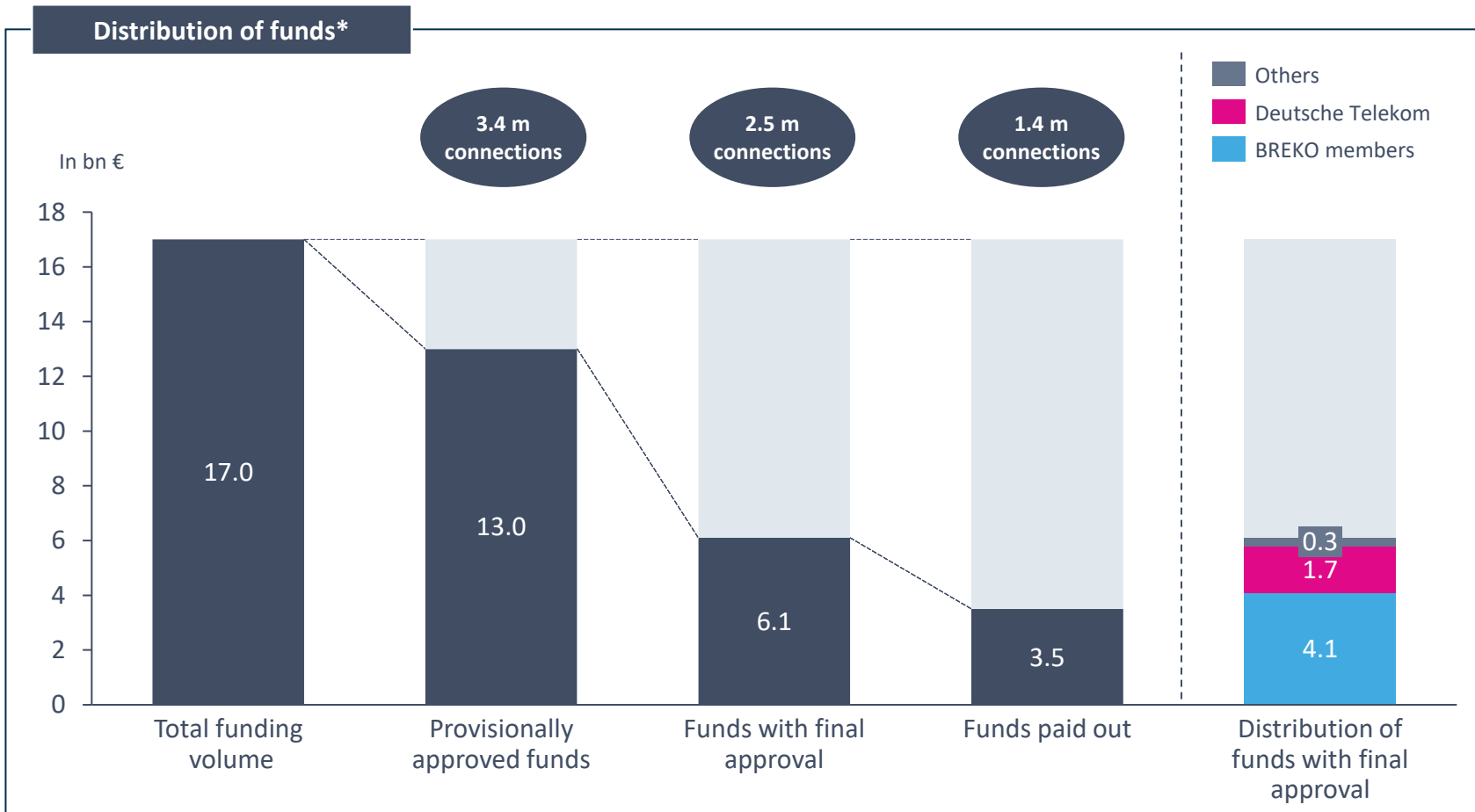
- Moderate growth in homes connected (300.000, approx. 3%)
- Homes Activated grows by 400,000 connections (approx. 10%)
- Companies focus on the nationwide fibre roll-out (HP) and activating the connections already available (HA).

Public funding



Broadband funding from the federal government

To date only approx. 21% of the funding available 2015-2023 has been paid out.



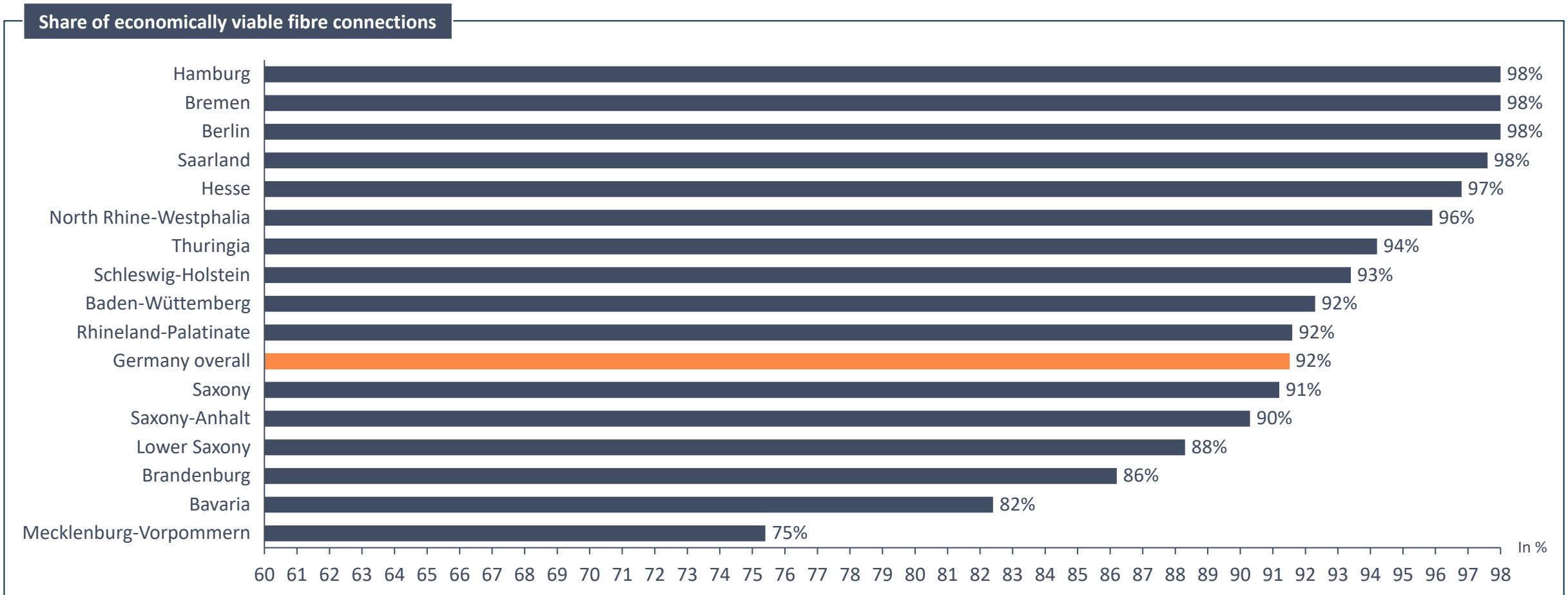
Implications

- The total volume of the federal funding programme will increase to € 17.0 billion in 2023 from € 12.8 billion the year before.
- Of this amount, € 13.0 billion have already been applied for by municipalities.
- € 6.1 billion have received final approval from the federal government for specific roll-out projects.
- € 13.0 billion of provisionally approved funds correspond to 2,650 roll-out projects and 3.4 million connections.
- In the future, public funding should focus on underserved regions.

Source: BMDV, Key figures on broadband funding, as of August 2023; BMDV, List of award winners, as of August 2023; *Federal funding, not including contributions by federal states and municipalities.

Economically viable fibre connections by federal state

According to an “analysis of potential” commissioned by the Federal Ministry of Digital Affairs and Transport, 92% of German households can be connected to fibre without the use of state subsidies.



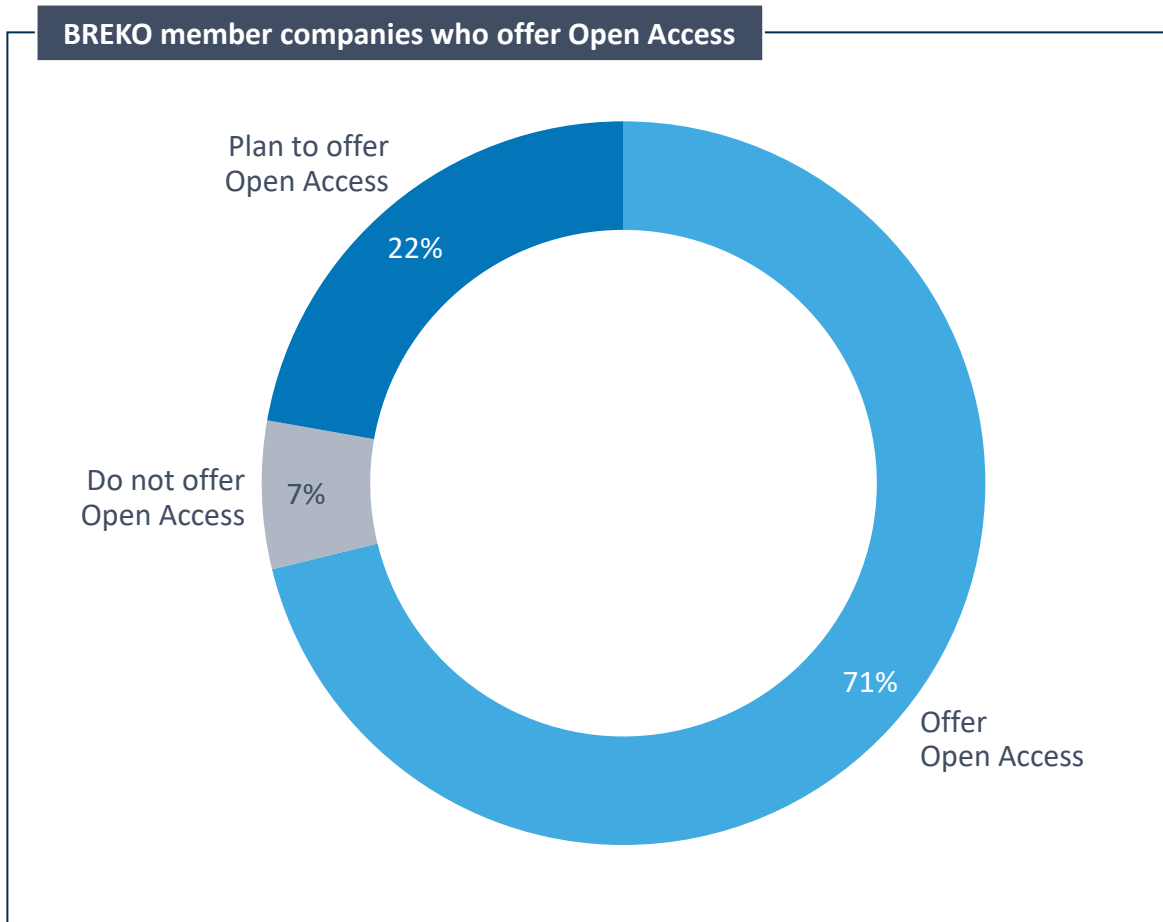
Source: WIK Consult 2023, Potenzialanalyse des eigenwirtschaftlichen Glasfaserausbaus in Deutschland.

Trends



Open Access

The relevance of Open Access business models increases: 71% of companies already offer Open Access.



Source: Survey of network operators (n=45).

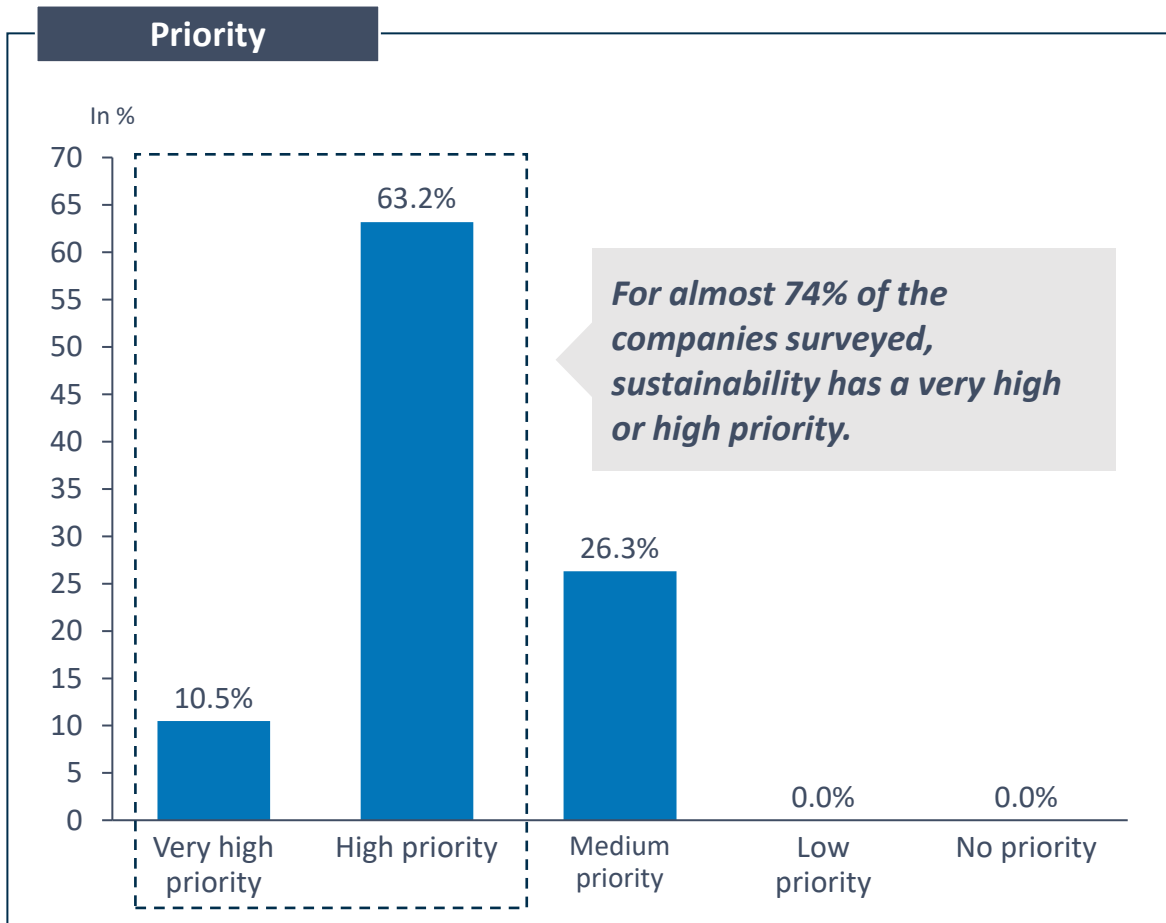
Open Access generates an average of 18% of network operators' total revenue.

Close to 74% of the companies surveyed expect that the business relevance of Open Access will strongly increase in the future.

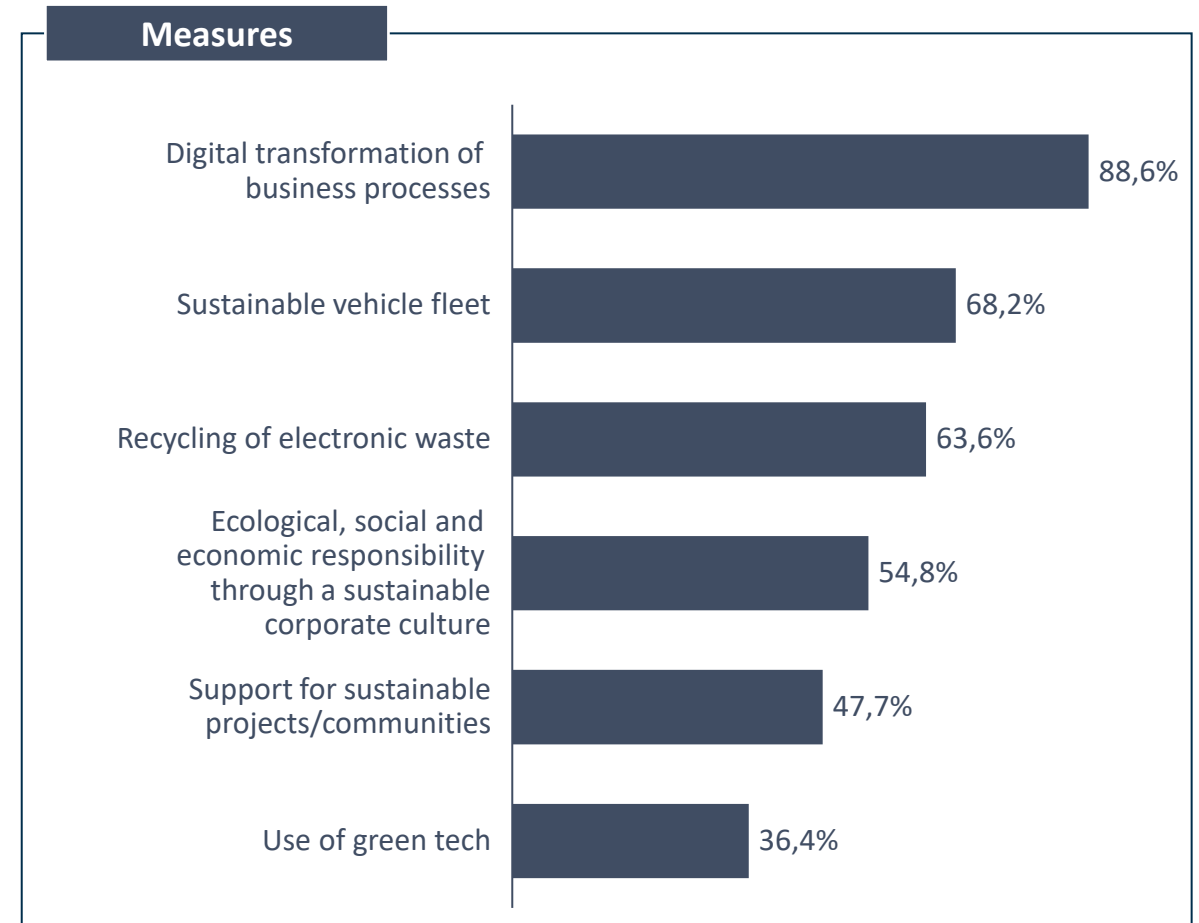
Source: Survey of network operators (n=32/46).

Sustainability in the telecommunications sector

Sustainability is a high priority for telecommunications companies – corresponding measures are being implemented.



Source: Survey of network operators (n=46).



Source: Survey of network operators (n=42-44).

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