

### How we make the right switch from copper to fibre optics

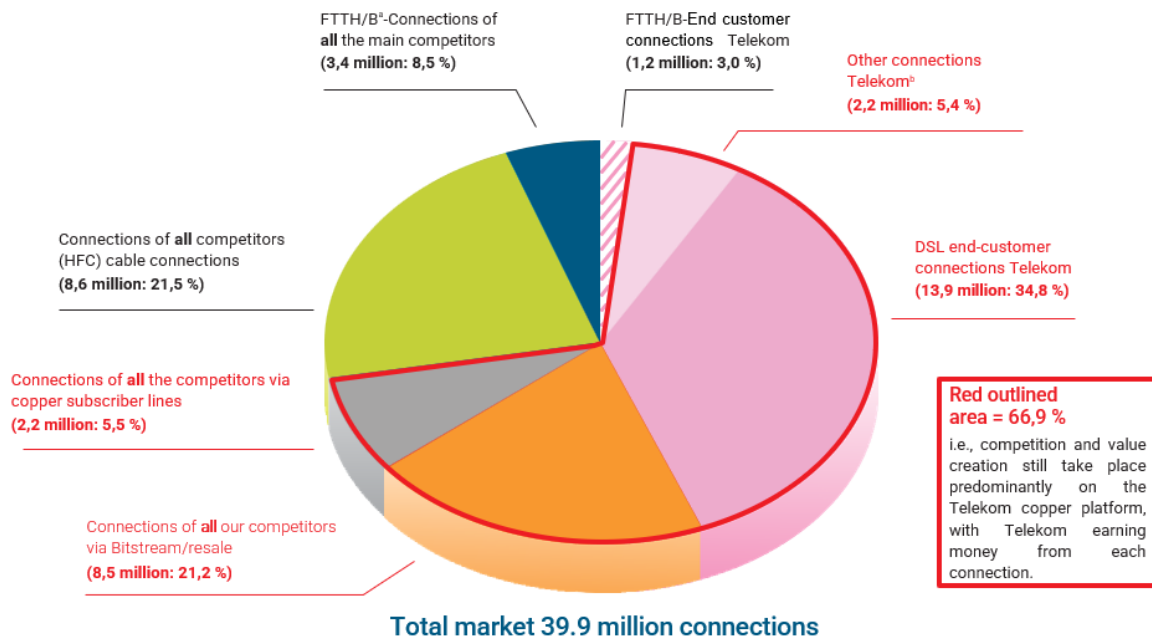
Fibre optics is undeniably the digital fixed network infrastructure of the future. Therefore, the German Government's Gigabit Strategy sets the goal of a nationwide fibre deployment by 2030. This initiative is not only about ensuring economic and social participation but also about securing Germany as a business location. However, the benefits of fibre deployment do not come simply from the construction of fibre optic connections alone, but only their actual use. The copper-glass migration (KGM) represents a unique opportunity to foster sustainable competition, ensuring both **the competitive network deployment and a diverse range of services and providers**. It is essential for both fibre deployment companies and access seekers that the framework conditions for a successful migration are regulated in a prompt and binding manner. All parties – fibre deployment companies, access seekers and end customers – need planning security during this sensitive market phase. Replacing the old copper networks with a modern fibre-optic infrastructure is an important lever for the overall development of the telecommunications market, competition and the digitalisation of Germany.

The Federal Government's gigabit strategy formulates a **goal that is as important as it is clear**:  
**"We want to make the transition from copper to fibre optic networks swift, competitive, consumer-friendly and environmentally sustainable."**

To achieve this goal, the Federal Ministry for Digital and Transport (BMDV), the Federal Network Agency (BNetzA) and all political decision-makers must act quickly. This is critical not only to meet the fibre rollout targets but also to maintain and further expand provider diversity. Only with functioning competition can Germany catch up internationally instead of falling further and further behind.

Currently, 24 million copper-based lines are still in active use in Germany. Our goal is to make the transition to the future-proof fibre infrastructure as appealing as possible offering new, attractive services for private and business customers. Today, 67% of all households in Germany access the internet via Telekom's copper DSL network - either directly through Telekom (14 million Telekom DSL customers) or via other nationwide access seekers such as Vodafone, Telefónica or 1&1 (almost 10 million DSL customers served by Telekom's competitors).

Fig. 2: Structure of end customer fixed-network lines (end of H1 2024)



In addition, there is the provision for business customers, companies and their employees in branch offices and home offices, where customised solutions – often still DSL-based – are required, such as those with special security or quality requirements. Ensure the best possible migration conditions in Germany politically, particularly for these use cases, is a key political task. Fair access to networks and **competition-compliant rules** will play a decisive role in the migration from copper to fibre, not only for private customers but also for business service providers, ensuring that the German economy has reliable telecommunications services essential for its digital transformation.

**It is imperative that Deutsche Telekom does not succeed in using the conversion of the old copper infrastructure to modern fibre technology as a means to solidify or even expand its still dominant market position in Germany.**

In its White Paper entitled "**How can the demand for digital infrastructure in Europe be met?**" (COM (2024) 81 final), the European Commission has already set extremely ambitious goals with regard to the shutdown of copper networks. These targets are based on the significant advancement of the fibre rollout made in other EU Member States. In Germany, however, we still have much ground to cover on the path to full fibre coverage and have only just begun to discuss the regulatory framework conditions for the transition from copper to fibre networks in a structured manner.

### Migration as a joint responsibility for all stakeholders

The EU, German policymakers and the regulator risk losing sight of equally important goals – the **efficient infrastructure competition** and **overall competition based on access to the network** of Telekom still holding significant market power – by focusing solely on achieving connectivity and fibre deployment targets. Companies rolling out fibre network, access seekers and politicians must work together with the regulatory authority to ensure that the opportunities associated with migration can be maximised, rather than allowing a major risk to competition to materialise instead. Telekom must also play its part for the benefit of our country, abandoning its strategic overbuild practices and systematic suppression of competition – or be compelled to do so. Additionally, Telekom's largely strategic refusal to use third party fibre networks of via bitstream offers ("wholebuy refusal") must come to an end if the migration is to succeed.

**We must understand the fibre rollout and the migration from copper to fibre as a joint responsibility for all market players.**

The VATM member companies are committed to ensuring that provider choice, access and service diversity as well as competitive pricing structures in Germany remain intact turning the **transition into a positive experience for customers throughout the entire migration phase.**

**When** the old copper networks **are ultimately shut down**, we will **continue to provide customers with** higher performance or maintaining the same performance without sudden cost increases. In this context, it must also be ensured that Telekom, given its economic advantages from shutting down of the copper network, bears the costs of the migration. Other telecommunications companies and end customers must not be burdened with these costs.

Until copper is switched off locally – with a few exceptions for technical or economic reasons – a real transition option to fibre or another gigabit-capable technology, such as hybrid fibre coax (HFC) must be guaranteed for **all of the remaining DSL customers**. A realistic scenario acknowledges that gigabit-capable HFC networks must be considered part of the solution if we aim to switch off the non-gigabit-capable old DSL copper networks as soon as possible.

If, in exceptional cases, the customer does not wish to switch to fibre optics, high-performance mobile or satellite technology can also be an alternative. However, from the perspective of both customers and providers, a sufficient transition period must be ensured to allow for the necessary densification ("Homes Connected") and to provide a real possibility of seamlessly switching to a fibre or gigabit connection due to largely nationwide coverage. To create

**planning security** for all market participants, the Federal Network Agency must promptly define fundamental rules based on a migration concept, even though the fibre rollout and migration will take many years.

The copper-glass migration must be recognised as a **historic opportunity to foster greater competition** in the telecommunications market.

From VATM's perspective, we must focus on the following goals:

1. **Maximum transparency is** required in Telekom's plans for the copper switch-off to ensure **the greatest possible planning security** for all stakeholders.
2. Significant **qualitative advantages for both private and business customers** and a smooth transition when switching off the copper networks.
3. **Fair, non-discriminatory conditions for wholesale customers**, enabling all relevant services for private and business customers to be provided at the highest quality level and in an economically viable manner.
4. A **non-discriminatory copper switch-off** must also be ensured where alternative fibre networks have already been deployed.

The final **shutdown of Telekom's parallel legacy copper networks is of particular importance to the competitor companies driving the fibre deployment in Germany**, as this will not only improve the network utilisation and thus economic viability but is also the only way to achieve the politically desired sustainability goals for digital infrastructure where new fibre networks make old copper networks obsolete.

The aim is to create a **secure "runway" for all market participants, including private and business customers, citizens, and companies** with sufficient lead time for advance planning. The existence of sustainable competition and provider diversity require the provision of services and fees on a wholesale level, as well as an independent enforcement authority in the face of the Federal Network Agency.

### Competition on the merits is indispensable

In terms of suitable political framework conditions and the necessary maximum level of planning security for market participants, the **competitive market model** must be reinforced. The competitive market model is vital both for the network deployment on one hand, in particular to ensure efficient infrastructure competition, and for service competition on the basis of market-oriented access products.

To prevent setbacks **in the competitive landscape on the existing copper network** and, in the future, on the new FTTH networks, strict regulation of the operator holding significant market power both on retail and business markets remains a **key factor for the success of the migration**, especially in this transition phase. Due to its copper monopoly, Telekom is heavily guided by corporate strategic considerations throughout the migration process, aiming to use **the transition from copper to fibre** to consolidate its market dominance during the migration process vis-à-vis the alternative fibre deploying companies and access seekers. The migration creates significant opportunities for Telekom for discriminatory practices, particularly in terms of network rollout and customer acquisition. Effective measures must be implemented from the outset in the design of the migration rules to counteract such developments.

To ensure a holistic view of the upcoming copper-fibre transition, including the final switch-off of copper in favour of all fibre networks and access seekers, and to finally provide for **planning security for investments and competition**, it is imperative to establish the necessary framework conditions for the following scenarios:

#### **Scenario 1: Voluntary migration of current copper customers to the new fibre networks of Telekom and its competitors**

In many cases, **contractual agreements** already exist **between companies or are being established with the assistance of platform operators**. As it encompasses the majority of the customers, the further standardisation and clarification of the technical and economic framework conditions of the migration at this stage, is one of the clear priorities of the Gigabit Forum<sup>1</sup>. **Attractive market-driven offers from the fibre deploying companies**, to wholesale

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<sup>1</sup> Gigabit Forum: 'With the establishment of the Gigabit Forum in March 2021, the Federal Network Agency has launched a process to work with the market and the relevant ministries to create an investment and competition-promoting framework for an accelerated transition from copper to glass [...]'

access seekers currently relying on Telekom's existing copper platform, are just as important as the **proper price setting**.

**Additionally, Telekom's** current volume discount system (known as the commitment model) must **be designed** by the Federal Network Agency in such a way that access seekers migrating their customers to third-party fibre networks are not disadvantaged. Moreover, **Telekom must abandon its refusal to engage in wholebuy agreements** and begin purchasing wholesale services from other providers. This would considerably facilitate and accelerate voluntary customer migration.

It is crucial to convince as many customers as possible of the advantages of the fibre network and to encourage voluntary migration. Incentives could be introduced well in advance, e.g. **through demand-side subsidies in the form of vouchers designed to be competition-neutral**, ensuring that both existing copper connections and potential fibre connections (homes passed) turn into real fibre customers (homes connected/activated).

### **Scenario 2: Migration of the last remaining copper network customers to the Telekom's fibre optic network in accordance with § 34 TKG upon copper switch off**

The existing legal framework regulates the process and the conditions for lifting Telekom's regulatory obligations associated with its copper network as an operator holding significant market power, once it decides to initiate the copper-fibre migration. In this context, the key challenge is to clarify the issues and then analyse the impact on other areas. This approach aims to proactively achieve a balanced outcome for all market participants regarding migration and network shutdown, including third-party networks and access regulations—as has already been done in other countries.

Deutsche Telekom is subject to regulatory requirements for the provision of appropriate wholesale fibre optic products. These must be implemented and designed in such a way that there are no competitive disadvantages for consumers (see Section 34 TKG and para. 77 of Commission Recommendation (EU) [2024/539](#) of February 6<sup>th</sup>, 2024, on the regulatory promotion of gigabit connectivity).

**To ensure a successful migration for both end-customers and access seekers, numerous prerequisites must already be met and demonstrated to the BNetzA before Telekom can notify the copper switch-off.** These include the actual serviceability of customers, fair

access rules, rules for cost allocation based on causation, and non-discriminatory migration, including to third-party networks.

Some aspects in detail:

- A **high level of fibre optic availability** (e.g. UK 75%) must already have been achieved when the notification is submitted in accordance with § 34 TKG so that the densification and the remaining fibre deployment can be completed until the final switch-off.
- A clear **strategy for densification and transition from Homes passed (HP)** (- easily connectable but not yet directly connected buildings) **to Homes connected (HC)** (- connected buildings, ideally already equipped with an in-building installation) must be established – covering the migration conditions in terms of timing, technical feasibility, and economic viability.
- The **appropriate spatial reference unit** for a "switch-off area" must be defined (not too large to hinder densification and the remaining deployment, but not too small to complicate migration marketing).
- **[Fibre-] Wholesale products** must be available throughout the entire value chain, both at active and passive level, under competitive conditions, allowing access seekers to independently market their services. In this regard, VATM has compiled a catalogue of requirements vis-à-vis the BNetzA, detailing the wholesale products needed to ensure competition with Telekom. Regulatory measures must be put in place for both the commercial and technical framework conditions, including crucial wholesale offers for private and business customers.
- The **costs** of the copper switch-off and the transition from HP to HC must be borne by Telekom (including termination, provisioning, and switching fees; infrastructure fees, customer service expenses, hardware costs); Telekom benefits from the migration, on one hand, by the better utilisation of its new network infrastructure and, on the other, from the considerable cost savings by eliminating the dual operation of the old copper network.



### **Scenario 3: Migration of the last copper network customers to competitors' fibre optic networks when the Telekom copper network is switched off**

There is currently no explicit obligation in the TKG for Telekom to switch off the copper network in areas where a competitor has rolled out FTTH. However, the BNetzA must apply § 34 TKG in a non-discriminatory manner. **Under no circumstances should this complex issue be clarified on a case-by-case basis under § 34 TKG**, which can only be initiated by Telekom and would not allow sufficient time to properly address these concerns. Instead, in view of the many regulatory challenges, **a comprehensive regulatory concept coordinated with the industry** must be established in advance of the rather short time horizon of the procedure foreseen in § 34 TKG. As foreseen in the European Electronic Communications Code (in the following EECC), the National Regulatory Authorities (in the following, NRA) must in carrying out their regulatory tasks must “ensure that all measures which are necessary and proportionate for achieving the objectives” of the EECC have been taken<sup>2</sup>, i.e. in particular the promotion of “connectivity and access to, and take-up of, of very high capacity networks (...) by all citizens and businesses”, “competition in the provision of electronic communications networks (...) and in the provision of electronic communications services”, “the interests of the citizens ” and “development of the internal market (...) throughout the Union. Furthermore, the European Commission’s **White Paper** of February 21<sup>st</sup>, 2024<sup>3</sup> (in the following, the Commission) stipulates that NRA must prevent strategic behaviour by the operator holding significant market power during the migration. They must specifically ensure competition safeguards on a wholesale and retail level and prevent lock-in effects to the detriment of alternative FTTH roll-out companies (COM (2024) 81 final, p. 31, 32).<sup>4</sup> In addition, the Commission's **Gigabit Recommendation**<sup>5</sup> requires NRA to ensure that the copper decommissioning process does not lead to discriminatory behaviour by the operator holding significant market power. While Telekom can secure its dominant market position in the fibre world due to almost 100% vectoring coverage, the alternative fibre deploying companies must achieve long-term economic viability and network utilisation, along with the access seekers, long before the complete switch-off of the copper networks.

A migration concept and regulatory framework that incorporate these factors and include a clear switch-off perspective increase economic viability from the start of the network

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<sup>2</sup> European Electronic Communications Code, Art. 3, General Objectives

<sup>3</sup> WP

<sup>4</sup> WP

<sup>5</sup> Gigabit Recommendation



deployment while reduces the need for state aid. Even though there is no explicit legal requirement for Telekom to switch off its copper network, the BNetzA is already obliged based on the current legal and regulatory framework and, therefore, mandated by law (TKG) to ensure a non-discriminatory copper switch-off, including for third-party fibre networks. **The most critical requirements must be laid down in advance by binding regulations from the BNetzA. This includes an agreement with the access seekers that allows them to continue offering attractive retail products for private and business customers.** In this context, it must be ensured that the access seekers migrating from Telekom's network to alternative fibre networks do not face any additional costs or other disadvantages compared to migrating to Telekom's own fibre network. As designated to hold a significant market power, an independent assessment of the Telekom's wholesale services and cost allocation must be made in order to prevent the squeeze out of the market of competitors also hindering the fibre roll-out.

Many details still need to be clarified, e.g. the continuity of DSL customers of Telekom's wholesale partners (e.g. 1&1, Telefónica, Vodafone), using so-called "**piggyback solution**" which would allow the access seekers to continue serving their customers through their existing wholesale contract with Telekom, cancelling the need of additional agreements with third-party providers.

In order to minimise the transaction effort and the associated costs, all the relevant measures must be established well in advance, including the establishment of a **piggyback solution**, or the involvement of neutral **platform operators**, as well as the clarification of fair and appropriate rules regarding the remaining costs in line with the interests of the industry should be clarified and stipulated in advance in order to ensure planning security for all market participants.

To align all these aspects in a meaningful way, a **holistic migration concept** is required – one that applies uniformly and non-discriminatorily to the whole copper switch-off, ensures **fair cost allocation**, and, essentially, is developed in close collaboration with the market players under the leadership of **the Ministry for Digital and Transport (in the following, BMDV) and the BNetzA.**

The concept must also recognise **the special role of Telekom as a player holding significant market power**, in order to prevent the squeezing out of the market of competitors. Despite Germany's unique technical and economic framework conditions for the migration ahead compared to other EU Member States, there is an urgent need to catch up with the more advanced migration efforts of the other EU countries.

**The BNetzA and the Gigabit Forum must take immediate action to develop a viable nationwide migration concept – as they are already required to do as part of the running pilot projects – and not just to focus on the migration and switch-off notified by Telekom. Instead, this should also be clearly set as a priority by the political authorities.**

Cologne, September 30<sup>th</sup>, 2024