

**POSITION | DIGITAL POLICY | DIGITAL INFRASTRUCTURE**

# **Resilient. High-Performing. Sustainable. Towards Europe's future-proof digital infrastructure.**

*BDI's policy paper on the European Commission's White Paper "How to master Europe's digital infrastructure needs?"*

**18 June 2024**

## **Executive Summary**

Connectivity is central to our society and economy and will only grow in importance in the future. Business models connected to Internet of Things (IoT) devices, autonomous vehicles, AI as well as the Industrial Metaverse require digital networks that not only provide minimal latency in combination with the needed capacity, but also the necessary resilience in light of increasing geopolitical tensions. In addition to these requirements, connectivity must also support the green transformation, which necessitates increasing sustainability and decarbonization of the ecosystem.

However, Europe's digital networks of today are not yet ready to address these challenges. The European market is fragmented, has a high number of independent providers and lacks the financial strength to fund the substantial investments needed to tackle the technological challenges it faces. In 2022 the mobile average revenue per user (ARPU) of electronic communications operators in the EU stood at only 15 EUR, as opposed to 42.5 EUR in the US and 26.5 EUR in South Korea. Against this background, the newly published White Paper "How to master Europe's digital infrastructure needs?" will form the basis for the next European Commission's legislative agenda for the telecoms sector. It identifies necessary policy reforms to improve the investment climate and structural market conditions to achieve the EU's digital objectives and create the digital networks of the future.

German industry very much appreciates the attention to digital infrastructures assigned by the European Commission. Overall, the Commission's analysis correctly describes the status quo of digital infrastructures in terms of investment challenges, resilience and technological future-proofness. It rightfully acknowledges the need for a more harmonized regulatory approach to digital networks, with the ultimate goal of achieving the Digital Single Market, which was highlighted in the recent Letta Report. It also rightly identifies the low profitability of the electronic communications sector and the resulting inability to fund the substantial investments required as a key problem that has to be addressed. BDI fears that if these issues are not swiftly addressed, Europe's communication infrastructure will not enable European companies to develop and utilize the digital solutions necessary for maintaining European industry's global competitiveness. Recognizing the importance of digital networks for European industry's competitiveness as well as access to needs-based connectivity, the Digital Networks Act (DNA) should be the key digital policy initiative of the next European Commission. Apart from that, and in light of the numerous digital regulations passed by the current Commission, the overall focus should lie on implementing and harmonizing existing regulatory tools.

### In a nutshell: Evaluation of the Commission's 12 scenarios

- **Scenario 1:** German industry supports the creation of pilot infrastructure, as we consider it a useful measure to test new technologies and promote exchange between different players of the value chain.
- **Scenario 2:** German industry is very positive about the Commission's proposal to set up a new infrastructure focused Important Project of Common European Interest (IPCEI). Such an IPCEI should be incorporated into a more active industrial policy, as this would provide the funds necessary for the large-scale deployment of advanced digital infrastructure and support the goal of bringing Europe technologically back on par with the US and China.
- **Scenario 3:** German industry strongly supports the European Commission's aim to simplify and coordinate the infrastructure-related support framework as this would lead to a more efficient usage of resources – in terms of finances as well as personnel in both public institutions and private industry – resulting in enhanced connectivity for society and industry.
- **Scenario 4:** German industry welcomes that the European Commission aims to initiate a thorough and in-depth consultation process of all relevant stakeholder groups – including telecommunication network operators, cloud service providers as well as end-user industries – to evaluate the implications of broadening the scope and objectives of the current regulatory framework.
- **Scenario 5:** German industry strongly opposes a mandatory copper switch-off by 2030, as it is overly ambitious and completely neglects diverging network characteristics across EU Member States (MS). Hence, a mandatory copper-switch off by 2030 would lead to excessive costs, a complete stand-still of the expansion of digital infrastructure in some MS as well as to the shutdown of functional, high-quality infrastructure at the expense of increasing costs for customers. The policy objective of full migration from copper to fiber should be achieved via measures supporting and facilitating the fiber roll-out as well as making copper switch off simpler and more efficient.
- **Scenario 6:** German industry generally supports a more coordinated awarding procedure of spectrum in Europe. The aim should be to strengthen investment, extend usage rights, allocate suitable spectrum in a timely manner and prevent inefficient or discriminatory auction designs. Here the focus should not lie on revenue-maximization for the MS. Due to different national circumstances, national assignment procedures should not be harmonized.
- **Scenario 7:** German industry strongly supports the Commission's intention of steering green investment into electronic communications networks, and in particular, the proposal to include electronic communication networks in the EU Taxonomy. This would also enable the usage of green technologies in other industries. However, the measures proposed to achieve a greener digital infrastructure have to be further adapted to ensure that the intended goals are achieved.
- **Scenario 8, 9, 10:** German industry supports the Commission's plan to promote advanced research and innovation (R&I) activities in support of new fiber and cable technologies, as well as the development of Cable Projects of European Interest (CPEIs), since connectivity and a resilient submarine cable infrastructure will be central to any future economy. Against this background, we also appreciate the European Commission's aim to review currently available support and financing instruments. We welcome the assessment that appropriate funding of CPEIs has to be ensured through EU and national funding instruments.
- **Scenario 11, 12:** We are very positive of a joint European governance system on submarine cable infrastructure and the promotion of international security standards for submarine cables since international regulatory approaches reduce the regulatory hotch-potch and increase resilience.

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## Connectivity as the enabler for the digital economy

Connectivity plays a major role for all industries today and will only grow in importance in the future, as the economy becomes even more digitalized and integrated. The reason for this lies in the increasing relevance of technologies and business models, which require high quality digital infrastructure. This trend is also visible on a macroeconomic level. The report “Shaping the digital transformation in Europe”, which was published in 2020 by the European Commission<sup>1</sup>, has shown that by 2030, the cumulative additional GDP contribution of new digital technologies could amount to EUR 2.2 trillion in the EU-28 (EU-27 and the United Kingdom), or 14.1 per cent growth compared to 2017. Importantly, the most advanced economies, in the report called ‘digital front runners’ would capture the larger share of the value added. In these countries, the annual average GDP growth would amount to 1.4 per cent annually, or 18.5 per cent in total when comparing 2030 to 2017. The report also identifies high-impact technologies that will shape the European economy and society. Here, “NextGen internet & infrastructure” is listed as an enabling technology, alongside the IoT and others. However, if a closer look is taken at the technologies identified, it can be seen that digital infrastructure is central to practically all of them. Whether it's AI, cloud computing, autonomous vehicles or the Industrial Metaverse, all of these technologies require resilient networks that provide a high bandwidth and reliability as well as low latency. Therefore, it is of utmost importance that Germany and Europe provide the conditions necessary to harness this potential by providing the connectivity needed and successfully achieving the digital transformation.

Looking for example at the Industrial Metaverse, it showcases the evolutionary development in the way how industrial processes are designed and implemented. By integrating state-of-the-art technologies such as digital twins, artificial intelligence, the Internet of Things and augmented reality (VR/AR), the Industrial Metaverse promotes the merging of digital and physical industrial processes. This integration optimizes value chains end-to-end, increases efficiency, reduces costs and improves adaptability to market requirements. However, seamless and effective interaction between devices of the Metaverse, and therefore the harnessing of its full potential, is only possible with the connectivity needs met. Therefore, just like reliable and well-maintained physical infrastructure is essential to a functioning economy, state of the art digital infrastructure, which is able to provide the connectivity needed, is crucial to be successful in the 21st century.

German industry depends on functioning and fail-safe digital infrastructures. While 100 per cent resilient infrastructures can never be guaranteed, the resilience of Europe's and Germany's digital infrastructure can be significantly enhanced by infrastructure competition, leading to parallel digital infrastructures of different operators. Thereby – in the event of a failure of or an attack on any single infrastructure – alternative digital infrastructures are available promptly. Therefore, there is a need for good framework conditions for investments in digital infrastructures and infrastructure competition that enables different infrastructure providers to coexist. Parallel infrastructures create a resilient digital backbone that enables industrial processes to continue operating even in the event of crises and enemy attacks.

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<sup>1</sup> European Commission. 2020. [Shaping the digital transformation in Europe](#).

## Pillar I: Creating the “3C Network” – “Connected Collaborative Computing”

### Scenario 1: Creation of large-scale pilot infrastructure

German industry supports the creation of pilot infrastructure, as we consider it a useful measure to test new technologies and promote exchange between different players of the value chain. However, it is important to identify the right technologies, which could benefit from such infrastructure. The Commission proposes “a number of large-scale pilots that set up end-to-end integrated infrastructures and platforms and bring together players from different segments of the connectivity value chain and beyond.”, which would focus on 5G corridors, e-health and smart communities. In regard to these proposals, we find that the 5G ecosystem has already undergone a lot of testing. Therefore, these pilots should focus on other, potentially adjacent, technologies that are in earlier phases of development, to ensure that respective large-scale pilot infrastructures could really make a difference. Examples are the exploration of possible use cases for AI in digital infrastructure, the deployment and cross-border federation of different edge cloud infrastructures, as well as the technological set-up of future 6G networks. This requires taking special characteristics of new technologies into account. For example, due to the technical nature, 6G will most likely only be deployed in the form of small networks that cover designated areas of usage. This means that a deliberate definition of “large-scale pilots” is needed to not exclude the technology a priori. In addition, it is necessary to provide the pilots with a regulatory framework, that is able to support the ambition of experimental testing. Therefore, the set-up of the pilot infrastructure should happen in the environment of regulatory sandboxes.

### Scenario 2: Set up of a new infrastructure focused IPCEI

German industry is very positive about the Commission's proposal to set up a new infrastructure focused Important Project of Common European Interest (IPCEI) incorporated into a more active industrial policy, as this would provide the funds necessary for the large-scale deployment of advanced digital infrastructure and support the goal of bringing Europe technologically back on par with the US and China. However, the White Paper remains very vague about the IPCEI's concrete scope and direction. Additionally, while IPCEIs are an essential instrument for securing European competitiveness and technological sovereignty as well as for promoting market-oriented innovations, they were plagued by excessive bureaucracy, lengthy processes, and complicated applications procedures in the past. For example, the IPCEI microelectronics two took two and a half years from the initial idea to the grant approval.

To make a real difference in the roll-out of advanced digital infrastructure and support European companies in a meaningful way, a prospective IPCEI for infrastructure must be less bureaucratic, more streamlined and efficient. Especially, the time from announcement of the programme to the notification of the funding decisions must be significantly shortened if the project shall attract applications from interested companies. To achieve this goal, approval procedures must be simplified, digitized and accelerated. The European Commission should provide sufficient capacity for this. The IPCEI processes in individual Member States are currently not coordinated in terms of timing and are sometimes carried out in several, unaligned phases. There is an urgent need for better coordination and appropriate harmonization, even in the pre-notification and notification phase.

In addition, the funding must be substantial. In the past, IPCEIs had comparatively low funding volumes in the single-digit billion range per technology field compared to huge investment programmes adopted by global competitors, such as North America and China. Therefore, a future infrastructure focused IPCEI has to receive a designated budget within the EU budget, which is high enough to enable Europe

to compete on a global scale. It is also important that the funding is not pulled out of already existing programs like Horizon Europe since this would weaken the support of other key technological areas. Finally, to guarantee that scope and direction of the IPCEI supports the industry in the best possible way, comprehensive consultations of all important stakeholders must be carried out.

A digital infrastructure related IPCEI could for example aim to complement and extend the already existing IPCEI on Cloud and Infrastructure Services, which is focused on R&D and a first industrial deployment. The goal of this new IPCEI could be to enable the deployment of edge cloud infrastructure at scale, with a view to achieve the EU's Digital Decade target of establishing 10,000 edge nodes by 2030. Moreover, we see a lack of attention given to Open Radio Access Networks (often called Open RAN or ORAN) in the Whitepaper. This is another technology which could be supported through an infrastructure focused IPCEI, promoting the development and rollout of open and interoperable network components in Europe.

### **Scenario 3: Establishing a simplified and coordinated support framework to**

**a) streamline procedures and improve synergies between existing instruments and programmes**

**b) ensure strengthening coherence, simplification, and clarity of future support action**

German industry strongly supports the European Commission's aim to simplify and coordinate the infrastructure-related support framework as this would lead to a more efficient usage of resources – in terms of finances as well as personnel in both public institutions and private industry – resulting in enhanced connectivity for society and industry. As already pointed out in the analysis of a possible infrastructure IPCEI, current programs are often inefficient and over bureaucratic. Therefore, a more coherent approach, which provides a single point of entry for funding and brings together relevant actors of the ecosystem, is very desirable. Additionally, we support the idea of identifying strategic technologies and the build-up of technological capacities in those areas in Europe. A clear and coordinated industry strategy would enable synergy effects and leverage more private investment.

However, there are also some points that we think would require more focus in a future DNA. We find that technologies, such as the already mentioned Open RAN as well as Network Application Programming Interface (Network APIs), are very important for future networks. While there are still some challenges that need to be overcome with these technologies, both hold significant potential. Therefore, they should be addressed by infrastructure-related funding and support mechanisms. In addition, more investment into the 5G infrastructure is crucial for the implementation of the Future Railway Mobile Communication System (FRMCS). The deployment of 5G and FRMCS will enable secure, efficient and high-capacity communications, which are essential for the modernisation and safety of railway infrastructure, as well as reliable on-board connectivity, thus, significantly improving the passenger experience.

Finally, while the scenario overall conducts a very sound analysis, it lacks a clear path to realize its findings. A future DNA must substantiate the goals drawn up in the White Paper, underpin them with measures to reach those goals, as well as provide a dedicated budget at EU level and not only rely on pooling resources from MS or existing projects. Moreover, an industrial policy approach cannot just stand in isolation. To be effective, it should be integrated and streamlined horizontally across various policy areas impacting the digital infrastructure sector. This includes, for example, competition policy, which needs to better take into account the competitiveness and economic security of the EU in a converging digital infrastructure market.

## Pillar II: Completing the Digital Single Market

### **Scenario 4: Broadening the scope and objectives of the current regulatory framework to ensure a regulatory level playing field and equivalent rights and obligations for all actors**

German industry welcomes that the European Commission aims to initiate a thorough and in-depth analysis and consultation process of all relevant stakeholder groups – including telecommunication network operators, cloud service providers as well as end-user industries – to evaluate the implications of broadening the scope and objectives of the current regulatory framework. The European Commission aspires to broaden the scope and objectives of the current regulatory framework to include economic security and competitiveness as important policy objectives and to ensure a regulatory level playing field and equivalent rights and obligations for all actors and end-users of digital networks where appropriate to meet the corresponding regulatory objectives. However, it must be ensured that any change to the objectives of the current regulatory framework helps to accelerate and does not lead to the hampering of the much-needed speed to deploying digital infrastructure or to additional conflicting goals. Since the telecommunications sector is already highly regulated, the European Commission should also reduce unnecessary red-tape and overtly bureaucratic requirements. Moreover, the inter-linkages between various sector-specific as well as horizontal European and national regulatory approaches must be thoroughly assessed and fully considered when developing the regulatory framework.

### **Scenario 5: Addressing technological and market developments and protection of end users as well as territorial coverage by**

#### **a) measures to accelerate copper switch off**

#### **b) change to access policy in view of full fiber environment**

German industry strongly opposes a mandatory copper switch-off goal, as it is overly ambitious and would lead to excessive costs, a complete stand-still of the expansion of digital infrastructure networks in some MS as well as to the shutdown of functional, high-quality infrastructure at the expense of customers. In part a) of its fifth scenario, the Commission proposes measures to accelerate the switch-off of copper networks to facilitate the transition towards new connectivity ecosystems. This should contribute to the EU's green objectives as well as promote the take up of new services based on fiber networks. To achieve its goals, the European Commission aspires to switch off 80 per cent of copper networks by 2028 and a full switch off by 2030.

Digital infrastructures characterized by low network latency, high and very stable bandwidth as well as sufficient redundancies are paramount for increasingly digitalized industry ecosystems. However, while the Commission's analysis of the economic and ecological benefits of full fiber networks once they are built is justified, a complete copper switch-off by 2030 is overly ambitious and completely neglects network characteristics in Member States, such as Germany. Therefore, we oppose the Commission's scenario 5a. According to data from the German Federal Network Agency (BNetzA), only around 19 per cent of users had a full-fiber network access in Germany at the end of 2023.<sup>23</sup> Increasing this to 100 per cent within five years would not be feasible as the civil engineering capacities necessary for such a massive acceleration of the fiber rollout do not exist in Germany (especially due to the shortage of skilled labor); and consequently, would result in excessive costs which ultimately the customers would have to pay. Therefore, German industry urges the European Commission to refrain from any

<sup>2</sup> European Commission. 2023. Digital Decade Country Report 2023: Germany.

<sup>3</sup> Bundesnetzagentur. 2023. Jahresbericht Telekommunikation.

fixed switch-off date for copper networks and rather adopt a technology-neutral approach, incorporating also alternative technologies capable of delivering gigabit speeds, while at the same time supporting fiber rollout and making the switchover process simple and efficient.

While full fiber networks are the future, alternative networks providing a higher connectivity quality than traditional legacy copper-based DSL infrastructures, can fulfill the need of a wide range of customers and should therefore be seen as a viable alternative to full fiber networks. For example, in recent years, some telecommunication operators have opted for upgrading cable networks to a Hybrid Fiber-Coaxial (HFC) architecture – and are still investing – or have significantly invested in other technologies all being capable of providing a very high-capacity network as defined and set as a goal. These investments by telecommunication network operators have been very costly and the political as well as legal framework conditions should safeguard such private investments and should provide for the necessary investment security.

In addition, despite the paper claiming that this timeline already considers national circumstances, we believe that a switch off by 2030 in every MS is completely unrealistic. We find that the situation in individual MS is quite different, regarding how much copper networks are in use today. Therefore, while we support defining a political goal for a switch to full fiber networks, we oppose any definite deadline as the binding switch off date for copper networks. As the European Commission's White Paper itself states, there is a substantial investment gap that hinders this quick switchover to full fiber networks.

**Scenario 6: Facilitation of the single market and building scale for activities of all players by**  
**a) a more integrated spectrum governance at Union level**  
**b) a more harmonized approach to authorization**

German industry generally supports a more coordinated approach to the awarding procedure of spectrum in Europe. However, there is a delicate balance to be struck between a more centralized approach, which could limit local ability to respond quickly to changing market conditions or technological innovation, and the need to achieve large economies of scale, which are important for the introduction of new technologies. German industry believes that spectrum management and authorization procedures, including concrete timelines, have to remain the responsibility of Member States, while a certain level of coordination at EU level – e. g. on license duration, auction design, early availability of spectrum resources – must be ensured and further strengthened.

The aim should be to strengthen investment, allocate suitable spectrum in a timely manner, prevent inefficient or discriminatory auction designs. We agree with the Commission's assessment that the duration of spectrum usage rights is an important lever for the competitiveness of European telecommunication network operators. While other markets around the world allow networks operators to purchase spectrum licenses for longer time periods or even for permanent use, rights in Europe expire after ten to 15 years and then have to be bought again. This reoccurring financial burden considerably reduces the ability to invest in network expansion. Therefore, we support a longer duration of frequency usage rights of at least 20 years. Additionally, the right of spectrum prolongations should be introduced into the European Electronic Communications Code (EECC) and such prolongations should become the standard mechanism for legacy spectrum, for example as 20+20-year-licenses. This leads to greater investment security for companies and in turn boosts the quality, affordability and sustainability of networks. Enhanced coverage and bandwidth are integral for Europe's industry to harness the benefits of digital technologies, such as cloud computing, quantum computing, industrial metaverse and Artificial Intelligence. To also achieve a more efficient spectrum usage in the future, we find that the principle of 'use it or lose it' is a sensible way forward, if it is applied equally to spectrum holders (e. g.

broadcast). However, telecommunication network operators should always be consulted before losing spectrum rights since there might be good reasons for a slow network expansion. Additionally, spectrum policy should address the interests of telecommunication operators as well as the manufacturers of wireless equipment. Therefore, when looking at spectrum distribution, the usability of devices such as wireless microphones should be ensured through the provision of adequate frequencies.

Another important assessment that we find compelling, is that the high costs of acquiring spectrum licenses through auctions have been a heavy burden for the European telecommunications sector in the past. The costs of spectrum licenses have deprived companies of the necessary investment funds needed to finance expansion of gigabit networks as well as to tackle current technological challenges. Therefore, alternative mechanisms that avoid expensive auctions are desirable. However, when looking at alternative design options, discriminatory auction designs that benefit market players due to their size or structure have to be avoided. A future DNA, therefore, must substantiate the goal of lowering the costs of spectrum licenses – as outlined in the White Paper – and underpin it with measures to reach it.

German industry also generally supports the goal of a more coordinated approach to authorization, which is addressed in scenario 6b. We agree that it has not yet been possible to create a single European market for telecommunications, in particular due to the sometimes widely divergent regulatory systems in MS. However, while the proposed solution of a simplified and more harmonized European regulatory framework of core networks and related services is a step in the right direction, it is not clear yet, if the deep fragmentation can be overcome. Moreover, we are hesitant whether a Country-of-Origin approach focused on authorization only will make a significant difference, while a more comprehensive Country-of-Origin concept would need a wide range of considerations to avoid distortions regarding a level playing field. The consequences of such measures could even have detrimental effects and should hence be carefully assessed. Therefore, we also advocate for further measures to tackle the excessive bureaucracy for network operators, including a shift from the telecommunications sector consumer law towards a horizontal consumer law. In general, we believe that a significant reduction of the current regulatory framework addressing operators of digital infrastructures would have far more positive implications for the entire market than the harmonization of authorization can have.

### **Scenario 7: Greening of digital networks**

German industry welcomes that the European Commission also takes into account sustainability aspects of digital networks and is particularly positive about steering green investment into electronic communications networks. This will not only facilitate the “greening of networks” through the usage of new technologies in electronic communications networks but – even more importantly – also the “greening by networks”. “Greening by networks” describes that the connectivity provided by advanced electronic communications networks enables other industries to use green technologies themselves and thereby further reduces emissions.

However, we believe that the European Commission could still do more towards achieving a sustainable digital infrastructure and should therefore adapt its proposed measures for a greener network in the White Paper. The Commission aims to increase the sustainability of digital networks by shifting more funding towards investment into more sustainable digital infrastructures, a timely copper switch-off and a more efficient network usage.

We agree that steering green investment into sustainable electronic communications networks through the use of green indicators is paramount for the expansion of sustainable, green digital networks.

However, as of today, the sector already faces high reporting costs and efforts to ensure compliant, externally audited reporting. Additionally, non-adequate criteria and inconsistent auditor's approaches result in weak informative value and low comparability of taxonomy KPIs for the sector. Therefore, the intended internal steering impulses are not effective, and financiers are not yet using the EU Taxonomy as a supplement for other information sources such as ESG ratings. This misses the chance to make the EU Taxonomy a driver for attracting investment. In addition, major inconsistencies between key pillars of the sustainable finance regulatory landscape, i. e. the Taxonomy, the Corporate Sustainability Reporting Directive (CSRD) and banking regulatory requirements, make it more difficult to use the Taxonomy. Therefore, the inclusion of Electronic Communication Networks into the EU Taxonomy has to be accompanied by a parallel workstream, aiming at improving sector-overarching usability of the EU Taxonomy and reducing reporting requirements. Additionally, it must be ensured, that the elements of the sustainable finance regulatory landscape are as coherent as possible regarding the EU Taxonomy.

As stated above, German industry opposes the Commission's unrealistic scenario 5a, which foresees a mandatory copper switch-off by 2030. Telecom companies are already doing their utmost to roll out fiber, but they face a bottleneck of limited planning and construction capacities available in Europe. A mandatory target is therefore inconducive as it will lead to higher costs for network rollout to the detriment of consumers.

### **Pillar III: Secure and resilient digital infrastructures for Europe**

#### **Scenario 8: Promoting advanced R&I activities across the EU in support of new fiber and cable technologies**

German industry supports the Commission's plan to promote advanced research and innovation (R&I) activities in support of new fiber and cable technologies, as connectivity will be central to any future economy. As we stated above, business models connected to Internet of Things (IoT) devices, autonomous vehicles, AI and the Industrial Metaverse rely on minimal latency, sufficient capacity as well as the uninterrupted provision of connectivity through resilient networks. In addition, as described in scenario 7, new fiber and cable technologies are not only important to achieve greener electronic communication networks but also to enable the greening of other parts of the economy. Therefore, supporting European equipment providers in further developing their R&I activities backs a key industry of the future and increases European technological sovereignty. To guarantee that scope and measures of future support programs assist the industry in the best possible way, comprehensive consultations of all important stakeholders must be carried out.

#### **Scenario 9: Establishment of a Cable Projects of European Interest CPEI list and related labeling system by a Delegated Act under the Connecting Europe Facility**

German industry welcomes the development of Cable Projects of European Interest (CPEIs) since a resilient submarine cable infrastructure is paramount to all European economies. Therefore, we support increasing the security and resilience of existing infrastructure through the establishment of a CPEI list as well as a related labeling system that identifies risks, vulnerabilities and dependencies. However, if CPEIs are lawfully obliged to comply with the most advanced technological standards to provide security, sustainability and civil protection, companies must receive adequate financial support to implement such measures. Otherwise, this would further drain the financial resources of network providers, who are also running submarine cable infrastructure, and increase the already existing investment gap in the sector.

**Scenario 10: Reviewing available instruments, in particular grants, procurement, blending operations under InvestEU and grant blending facilities, with a particular focus on leveraging private investment to support CPEIs, including the possibility of an equity fund**

German industry strongly supports the European Commission's aim to review currently available instruments. Furthermore, the assessment that appropriate funding of CPEIs has to be ensured through EU and national funding instruments is welcomed. However, it is important that the funding is not pulled out of already existing programs, like Horizon Europe, since this would weaken the support of other key technological areas. Nonetheless, we appreciate the enhanced focus on leveraging private investment for CPEIs.

**Scenario 11: Proposing a joint EU governance system on submarine cable infrastructures**

German industry welcomes a joint EU governance system on submarine cable infrastructure since it holds the potential to create common European standards for submarine cable infrastructure which in turn reduces bureaucracy, enables funding and increases resilience. We also support the associated recognition of submarine cables as a central pillar of economic security since we believe that there is a need for increased redundancy and resilience.

However, the success of such a governance system heavily depends on its design. Redundancy and resilience can best be realized through a diverse supply chain for components of submarine cables, and building new submarine cable infrastructures. Thus, uniform, good regulatory conditions must be created to facilitate the construction of submarine cables in all trusted European states to avoid an accumulation of infrastructure in few locations, which have a more favorable regulatory framework. To achieve this goal, transparent permitting is important. Licenses for submarine cables have to be awarded with as little regulation and as much transparency as possible. In addition, the measures to guarantee appropriate funding discussed in scenarios 9 and 10 must enable uncomplicated financial support to drive forward the expansion of infrastructure.

**Scenario 12: Harmonizing security requirements in international fora, which may be recognized through a dedicated EU certification scheme**

German industry appreciates the European Commission's aim to promote international security standards for submarine cables since international regulatory approaches reduce the regulatory hotch-potch. However, in light of the overly lengthy and opaque processes of developing EU certification schemes within the framework of the European Cybersecurity Act (CSA), any recognition or similar work should not be conducted within the framework of the CSA. The European Commission's aim to identifying best-in-class standards that harness the latest developments in security and self-monitoring capacities for cables and associated routing and relay equipment is a much appreciated step.

German industry is a staunch advocate of internationally harmonized standards promoting risk-adequate measures that address both cyber and physical threats. Therefore, we welcome the European Commission's aspiration to work towards a respective standard for submarine cables in international fora. German industry urges the European Commission to closely liaise with industry representatives when developing a respective standard in order to ensure that such a standard addresses the current threat vectors while also considers the technological specificities of submarine cables. In this regard, we would appreciate if the European Commission would hold open public consultations with producers, deployers and operators of submarine cables.

Should the European Commission aspire to adopt an international standard on security requirements for submarine cables within the framework of the CSA, German industry urges the European Commission to enhance the transparency of and stakeholder inclusion in the process of drafting EU cybersecurity certification schemes. Moreover, we urge Member States to opt for a more coherent and harmonized application of mandatory certification within the Digital Single Market as this would avoid market distortion and provide equal levels of security.

## Necessary scenarios not addressed by the European Commission

While the European Commission's White Paper already addresses a significant number of very important aspects concerning the future design, development and resilience of digital infrastructures in Europe, German industry would appreciate if the European Commission was to consider the following aspects as well:

### Resilience of digital networks

The resilience of digital networks – both to digital and physical threats – is paramount for German industry. Resilient and secure networks are best created through infrastructure competition, as this produces high-quality, complementary networks that are redundant in the event of a failure. To foster the resilience of networks while enhancing the regulatory certainty in conjunction with a reduction of unnecessary bureaucracy, German industry urges the European Commission and Member States to harmonize security requirements rather than continuing the current approach of national unilateral measures. The European and national legislators have introduced a plethora of security-related regulatory measures in recent years – including but not limited to the NIS-2-Directive, the German IT-Security Act 2.0, the EU's 5G toolbox as well as national security catalogues for telecommunication infrastructures. As a result, operators of telecommunication infrastructure as well as manufacturers of components for these networks face a hotch-potch of regulatory requirements across the EU.

Bearing in mind the current roll-out of 5G, German industry urges the European Union Agency for Cybersecurity (ENISA) to speed up the development of an EU certification scheme for 5G technology (EU5G). This European scheme would enhance regulatory certainty within the EU's Digital Single Market and could foster negotiations with third countries. To be at the forefront of security-related standardization work, the EU should engage with stakeholders along the 6G value-chain to streamline security-related initiatives regarding 6G networks. Internationally harmonized technological and legal requirements reduce the implementation costs for businesses, and thereby, make internet connectivity more affordable for all which contributes to attaining the Commission's goals for the Digital Decade.

### Acceleration of permit and authorization procedures

To achieve the goal of providing companies and the population with high-performance Internet access EU-wide – and thereby to reach the EU's targets for digital infrastructures – hundreds of thousands of kilometers of fiber optic cable will have to be laid in the next few years and tens of thousands of mobile phone towers will have to be built or modernized. This will only succeed within the targeted timeframe if existing expansion hurdles are reduced and the full potential for acceleration is exploited. Currently, the authorization procedures for new cell phone towers take on average 18 to 20 months in Germany. Such lengthy permit procedures significantly hinder a speedy expansion and modernization of digital infrastructures.

Fast authorization procedures are of utmost importance. To achieve the ambitious infrastructure targets that have been set, permit procedures must be streamlined, consistently digitalized and drastically shortened. The Gigabit Infrastructure Act has failed in introducing a binding tacit approval mechanism and allows Member States to derogate. Therefore, we urge Member States and the European Commission to:

- enable completely digital administrative procedures for authorizing the roll-out of digital infrastructures,
- facilitate the approval / authorization of building mobile phone towers on public buildings, and
- introduce tacit approval within two months after submission of a respective building request.

While speeding up planning and authorization procedures must be achieved through targeted measures in each Member State, the European Commission – as part of a holistic initiative for digital infrastructure – should urge Member States to swiftly implement the measures recently agreed in Article 7 of the EU's Gigabit Infrastructure Act. Otherwise, operators of digital infrastructure will not be able to expand or modernize their infrastructures, and European industry will not be able to reap the benefits of state-of-the-art infrastructures for digital business models.

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Federation of German Industries e.V. (BDI)

Breite Straße 29, 10178 Berlin

[www.bdi.eu](http://www.bdi.eu)

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### Editors

Philipp Schweikle

Working Student, Digitalization and Innovation

T: +49 30 2028-1632

[P.Schweikle@ifg.bdi.eu](mailto:P.Schweikle@ifg.bdi.eu)

Steven Heckler

Deputy Head of Department, Digitalization and Innovation

T: +49 30 2018-1523

[S.Heckler@bdi.eu](mailto:S.Heckler@bdi.eu)

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