



March 2022

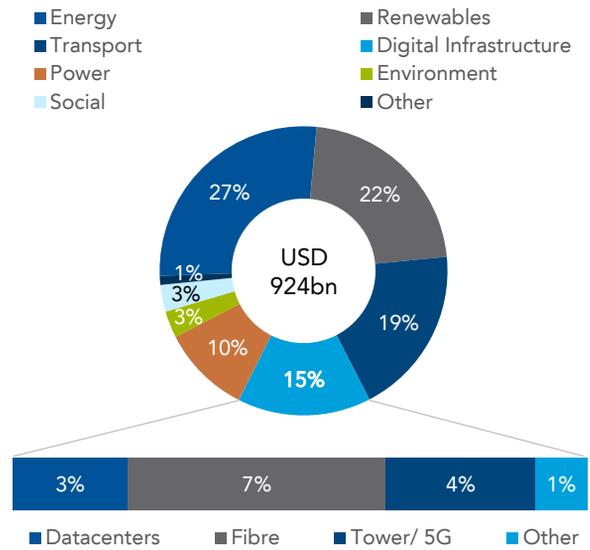
Financing Europe’s Digitalization: Current market trends and opportunities

Key takeaways from the Prime Digital Infrastructure Round Table

Executive Summary

- Steady increase in consumption of internet services has been further accelerated by the COVID-19 pandemic
- Massive growth of the digital infrastructure sector during the last 2 years, with market share reaching 15% globally and 23% in Europe – reflecting a 12PP increase in the European market since 2019
- Incumbent internet service providers (ISPs) see increasing competition – especially in the suburban/rural fibre market. Big infrastructure sponsors enter and consolidate the capital intensive digital infrastructure market, selectively teaming-up with incumbent ISPs.
- ESG becoming increasingly important, as digitalization effects the market with new challenges, e.g. high energy consumption as well as the inclusion of rural and sub-urban areas in nation’s roll-out and connectivity plans

Global Infrastructure Market 2021



Source: Inframation

The European Digital Infrastructure Market

Society’s hunger for internet services has been further accelerated by the COVID-19 pandemic, as stay-at-home-directives caused a sharp increase in data consumption through teleworking, remote studying, and intensive use of video content and high definition streaming.

However, the necessary infrastructure to offer comprehensive access to high-speed connections that are able to accommodate current and future data-demand does not exist yet.

Thus, the demand for fibre networks roll-out will continue to grow. Directly linked to the roll-out of fibre is other digital infrastructure, mainly data centres. Where data centres are the warehouses of information, the transport logistics and speed of such is dependent on fibre connectivity.

With the expansion of hyperscalers such as Microsoft, Facebook or Google and other market participants, planning on operating new data centres across Europe, corresponding fibre demand is inevitable.

In the last 6 months of 2021, a trend away from traditional Tier I FLAPD markets (Frankfurt, London, Amsterdam, Paris and Dublin) towards additional Tier II markets, incl. Oslo, Copenhagen, Berlin and Lisbon, could already be observed.

In contrast to fibre access in European metropolitan regions, the state of household-access to fibre networks is still scattered across Europe, as the penetration of Fibre-to-the-Home/Building (FTTH/B) access varies widely across leading European nations.

Our view on the sub-sector is both positive on the short- and on the long-term. We expect increasing activity in Tier II markets as well as further consolidation leading to increasingly larger transactions.

Phillip Hall, MUFG



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The Nordic countries are amongst the nations with the highest Fibre-to-the-Home (FTTH) penetration worldwide. In 2021 Sweden had an FTTH/B penetration ratio of 67% and is expected to reach a ratio of 79% by 2026.

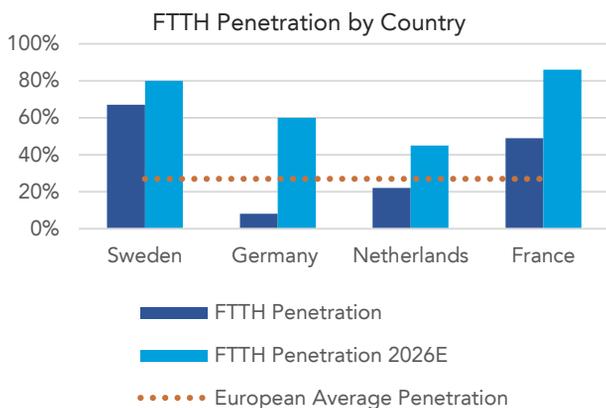
Similar to Sweden, the FTTH market in Norway and Denmark has been growing with a compound annual growth rate (CAGR) of 13% between 2017 and 2020. It is expected to continue growing by 7% until 2025 reaching similar penetration ratio levels as in Sweden.

In contrast to the Nordic countries, Germany has been rather slow in adopting a more rapid expansion of networks with high bandwidth capacity.

The activity in the fibre sub-sector remains high, with a strong pipeline of greenfield assets still coming to market to meet national roll-out plans. Especially rural areas are in focus of and thus benefitting from recent transactions in Germany and France.

Stefan Futschik, PCAG

At the end of 2020 54% of the German population had access to bandwidth of up to 1 Gigabit per second through cable coverage and 15% via fibre coverage. In terms of FTTH coverage, Germany lacks far behind the European average of 44% with only 15% of households covered (rural areas 10% vs. 22% European average). The FTTH subscription rate (homes actually connected) is with 8.4% in 2021 also behind the European average of 21%.



The FTTH Council Europe, however, forecasts the German market to grow tremendously until 2026, with FTTH coverage increasing to 33m households (78%) and subscription rate growing to 60%.

The different stages of maturity of the FTTH market across European countries offers a variety of different financing structures. As such, e.g. in Germany major greenfield fibre roll-out deals with corresponding construction phase drawdowns are still coming to the market.

The “shift” to brownfield deals is a logical consequence of previous greenfield projects coming to the market for refinancing, after the majority of construction has been finalized. This provides an interesting market opportunity for institutional investors, especially with regards to risk mitigation as well as capital deployment.

Stefan Futschik, PCAG

On the other hand, refinancing of previous greenfield transactions in the form of term loans in combination with additional Capex lines for further roll-out can be seen in more mature markets, such as the Netherlands or Nordic regions.

ESG Profile of Digital Infrastructure Assets

The internet, communication and telecoms sector is a key sector for climate change mitigation since data sharing, storing and processing are highly energy intensive. Furthermore, communication technologies and devices proliferate on a global basis, with data consumption increasing steadily.

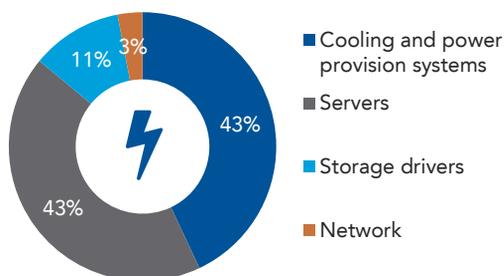
Telefónica’s joint venture, Unsere Grüne Glasfaser, aims on deploying energy efficient fibre technology with a focus on rural and sub-urban areas in Germany, contributing to environmental and social sustainability.

Albert Graf, Telefónica Germany

While fibre technology is an energy efficient upgrade compared to coax/ copper, roll-out of new fibre connections additionally promotes social sustainability by increasing accessibility of modern infrastructure, especially in rural areas.

However, increased demand for high-performance data centres has also led to significant increases in energy consumption to power the devices that provide these services.

Data Center – Share of total energy consumption by component



A study by the European Commission shows that in 2018 the energy consumption of EU data centres was 76.8 TWh, which represents 2.7% of the total energy demand in the EU, and expects the consumption to reach 98.5 TWh by 2030, an increase of 28% (3.2% of total expected energy demand in the EU in 2030). Breaking down the energy use of data centres by operational components it becomes clearer where most of the consumed energy is used. Approximately 86% of the energy consumed is used by the servers and the cooling system that prevents components from overheating.

Although, the energy consumption is relatively high, data centres have never been more efficient. While the computing performed in data centres has increased by 550% between 2010 and 2018, the amount of energy consumed increased by only 6% during the same period.

The concept of energy reuse efficiency (ERE) is another way for data centres to become more ESG conform. ERE is giving data centres the opportunity to become energy suppliers, not just users. Utilizing waste heat, data centres can reject heat from server halls into district energy systems for reuse. This concept has already been implemented in the Nordics, where Stockholm’s Data Park is aiming to heat 10% of the city by 2035 reusing its waste heat.

However, the largest lever towards sustainability is the source of energy used in the data centres. Big Tech companies such as Alphabet and Meta (formerly Facebook) are the largest corporate buyers of renewable energy. Both are currently committed to reach carbon neutrality by 2030. Amazon, which was the largest buyer of PPAs in 2021 with 1.8GW linked to renewable energy projects (30% of total European PPAs), is aiming to use 100% renewable energy for its data centre operation by 2025 and reach carbon neutrality by 2040.

This excess demand for PPAs is creating a market that is attractive for project financing and investments in the renewable energy sector due to reliable, long-term visibility on revenues.

Presentation Panel



Andreas Kalusche,
CEO and Board Member (Prime Capital)



Stefan Futschik,
MD and Head of Private Debt (Prime Capital)



Phillip Hall,
MD and Head of Structured Finance Office for EMEA (MUFG)



Albert Graf,
Director Corporate Finance & Tax (Telefónica Germany)

Contact:

Prime Capital AG

Bockenheimer Landstr. 51-53
60325 Frankfurt am Main
Germany

13, Rue Beaumont
L-1219 Luxembourg
Grand Duchy of Luxembourg

impd@primecapital-ag.com
+49 69 9686 9840
<http://www.primcapital-ag.com>

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