

# Emtelle and Deutsche Glasfaser Overcome Cost Challenges to Bring FTTH to Rural Germany

The partnership takes on Germany's goals to nationally expand gigabit networks by 2025 and to expand fiber infrastructure in schools and local enterprises.

By Stefanie Sill / *Emtelle*

**T**he increased demand for un failing, reliable connectivity is now evident everywhere around the world – from large, affluent cities to small, rural communities. To meet demand, service providers must deploy the most effective, next-generation technologies that enable the proliferation of connected devices. This is key to a globally connected future.

National governments have unveiled plans to proactively bridge the digital divide and provide broadband services to all consumers. The European Commission has a vision to provide access to connectivity of at least 100 Mbps for all European households by 2025.

In Germany, Emtelle, a blown fiber technology provider, and Deutsche Glasfaser, a fiber-to-the-home (FTTH) provider, are working together to facilitate the country's goal of expanding broadband access to rural areas. Their partnership is enabling them to overcome typical challenges associated with rolling out fiber in rural areas.

## CONNECTING THE RURAL LANDSCAPE

When it comes to broadband access, rural communities around the world remain significantly behind their neighbors in more densely populated cities, towns and villages. Implementing and deploying fiber technology

in rural environments can prove problematic for a variety of reasons.

Connecting homes via a fiber street cabinet can be particularly challenging because of the significant space between houses, which in turn means slower internet speeds. With unfavorable terrain and significant distances, a rural environment can pose significant challenges to even lay fiber in the first place. Out-of-date infrastructure and the high expense needed to maintain or upgrade it also can discourage service providers from taking much-needed action.

Another notable factor potentially holding back service providers from adopting fiber, especially in rural areas, is the perceived cost. The cost of building out fiber networks must be weighed against the cost of maintaining out-of-date and legacy copper networks already in place. Providers may decide that migrating to fiber is ultimately worth it because they can monetize services that new technologies facilitate, such as the internet of things (IoT) and 5G.

Europe is tackling the challenge of expanding broadband access to remote areas of the continent. It unveiled its Broadband Handbook to address the challenges of broadband deployments in rural and remote areas. In addition to outlining technology solutions and broadband targets, the handbook identifies sources of EU funding to help

countries connect unserved and underserved populations.

Germany's approach deserves special consideration. The German national government outlined its goals to nationally expand gigabit networks by 2025 and to expand fiber infrastructure in schools and local enterprises in each region of the country. In addition to supporting rural FTTH projects by allocating funding of up to €30 million (\$35.6 million) per project, the country's funding program outlines a special material concept prescribing a minimum of 10/6mm microducts for connecting homes. Service providers across the globe see a lucrative opportunity, and are keen to provide rural communities with the connectivity they deserve.

### DEUTSCHE GLASFASER AND EMTELLE STEP UP

High fiber-deployment costs remain a challenge for providers across Europe. In Germany, blowing costs are about 1 euro (USD\$1.19) per meter, civil engineering costs are about 80 euros (USD\$95) and house connection costs for house owners typically are about 750 euros (USD\$891). Therefore, as 80 percent of expansion costs are civil engineering costs, the entire fiber rollout process can be slow.

Beginning in September 2019, Deutsche Glasfaser sought to establish a swift network expansion across all regions of the country and partnered with Emtelle on a three-year, €63 million (\$75 million) contract to help facilitate Germany's nationwide FTTH project. Deutsche Glasfaser selected Emtelle to provide pre-installed and pre-connectorized fiber solutions because Emtelle has the knowledge and experience to overcome the task of building complex and large-scale fiber deployments to enable the rollout of ultrafast internet to rural Germany.

Deutsche Glasfaser is undertaking the fiber rollout in 10 of 16 German states with a focus on North-Rhine Westphalia (Western Germany), Bavaria (South Germany), Lower Saxony (Central Germany) and Schleswig-Holstein (Northern Germany).

There is renewed focus on rural areas, with implementations beginning with small villages of only 100 citizens

to funded projects, municipalities, and whole regional districts. As of May 2019, Deutsche Glasfaser provided service to 300,000 homes connected and 500,000 homes passed. The planned expansion will see 600,000–700,000 households connected per year to FTTH.

### SOLUTIONS FOR CHALLENGING PROJECTS

For deployments such as Deutsche Glasfaser's network, solutions that are cost-effective and easy to install are important. Deutsche Glasfaser selected Emtelle as the primary solution provider over two other Tier-1 fiber optic competitors for its range of solutions, and adopted Emtelle's approach to overcome technical and financial challenges. Emtelle provided the compatibility for tested and certified cables with microducts.

Deutsche Glasfaser is rolling out FTTH services in several localities, including Bexhövede, Donnern, Düring, Loxstedt, Nesse, Stinstedt and Stotel.

Emtelle provided a range of tube bundles and fiber cables, including its passive FibreFlow solution, minicable and microducts from exchange to cabinet and pre-installed fiber systems, and tube bundles from cabinet to home.

Deutsche Glasfaser will deploy the FibreFlow solution as part of its ongoing plans to implement FTTH networks quickly and cost-effectively across Germany. Emtelle's enhanced 4mm tube bundles with the use of its 12- and 24-way Multifu will be deployed to support Deutsche Glasfaser's rapid network expansion. Emtelle's Multifu pre-installed fiber solution, which requires no blowing, lowers costs while increasing the number of homes connected from the initial drop.

A major challenge for rollouts is labor shortages, which impact installation capacity and cause delays to operators. But Emtelle's pre-connectorized Multifu solutions don't require fiber blowing and guarantee faster installation without any further splicing or blowing expertise. Emtelle also provides installation training.

Deutsche Glasfaser required a pre-installed fiber solution, which had lower upgrade and maintenance costs for the lifetime of the network and could be adapted for low-cost construction

techniques, such as narrow trench and shallow depth burial. Using 4mm tube bundles helped increase rollout speeds, reduce skills requirements and minimize installation times for Deutsche Glasfaser's fiber broadband network.

Emtelle's FibreFlow blown fiber solution incorporates microducts from 3mm to 20mm and has a range of fiber bundles and cables from 2 to 576 fibers, which can be blown into the microducts. This is complemented by a range of customer entry systems, termination boxes and patch cords for the delivery of the home package. Having access to a flexible duct system that provides the ability to drop directly to the home or business was highly advantageous for Deutsche Glasfaser. Emtelle's pre-installed and retractable fiber solution RTRYVA can be accessed at any point along its length and has the benefit of blown fiber without the blowing. Emtelle's RTRYVA solution and 7mm tube bundles also will be supplied to support the network upgrade in certain areas; its 10/6mm solutions will cover the government-funded areas of the project.

The German funding program requires minimum microduct dimensions for each distribution level, beginning with the backbone. The concept requires a minimum size of 10/6mm solutions for house connections and a minimum of four fiber connections per household, with an additional two fiber connections per building. In the future, there will be larger duct sizes and fiber reserves for 5G expansion and further fiber connections, such as the connection of streetlamps as a 5G spot.

### FIBER IS THE FUTURE

Across rural Europe, the attention has shifted for service providers to connect unserved and underserved people. Fiber technology continues to be the natural and unrivaled choice to help meet operators' subscriber demands seamlessly. The partnership of Emtelle and Deutsche Glasfaser shows how fiber can be rolled out to more people in more remote areas in ways that are cost-effective and efficient. ❖

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