

GERMANY

ICT – Information & Communications Technologies

Location

Kassel

Programming period

2014 – 2020

Priority

P6 – Social inclusion and
local development

Measure

M7 – Basic services and
village renewal

Funding (EUR)

Total budget 40.9 m
EAFRD 20 m
National/Regional 20.9

Project duration

2017 – 2020

Project promoter

Breitband Nordhessen
GmbH

Contact

[laurier@breitband-
nordhessen.de](mailto:laurier@breitband-nordhessen.de)

Website

[www.breitband-
nordhessen.de](http://www.breitband-nordhessen.de)

Five districts in the north of Hesse joined forces to provide fast internet access in a region where no privately financed investment was covering the existing digital divide.

Summary

With the aim of supplying around 1 million inhabitants in five districts in the northern part of Hesse (around 380 000 households and 52 000 tradespeople in 570 small villages) with fast Internet at speeds of at least 30 megabits per second, the districts joined forces to launch Europe's largest broadband expansion project and are implementing a viable business model in Breitband Nordhessen GmbH (BNG). The EAFRD is providing 20 million EUR funding for the project.



Results

By the end of 2017, 850 kilometres of the passive pipe system had been laid to connect more than 570 locations. The contractually agreed target of 650 km was thus exceeded by 40%.

In May 2018, more than 1 000 kilometres of the planned pipeline system, and thus more than half of the planned 2 000 km, had been built. Around 70% of the expansion target will be achieved by the end of 2018 and the laying of empty conduits and cables will be completed by the end of 2019.

At the end of 2017, 112 of the 570 planned locations were under construction and over 650 of the 1 400 distribution cabinets had been installed.

Lessons & Recommendations

- ❑ A key success factor was the development of a viable business and operator model. By merging the five districts, the project costs for the expansion of the passive infrastructure were reduced. Since the network remains the property of the districts and is leased, this is an investment that will be refinanced in the long term.
- ❑ Central challenges of the project are the interface management between different stakeholder groups and interests resulting in a high need for communication, and the complexity of contracting (multiple Europe-wide tenders) as well as state aid law (EU notification).

Context

This broadband expansion project covers five districts (Kassel, Schwalm-Eder, Waldeck-Frankenberg, Werra-Meißner and Hersfeld-Rotenburg) in the region of north Hesse. The area is relatively sparsely populated with 1 million inhabitants over around 6 900 km².

Despite successful efforts at the municipal level to provide the entire population with internet access of 1 Mbit/s, all five districts are below the German average in terms of availability and quality of high-speed broadband connections. Around 20% of the population have access to download speeds of 30 Mbit/s or more. Therefore many citizens and companies in the region could not benefit from the opportunities presented by the modern information society.

In 2014, the Breitband Nordhessen GmbH conducted various market surveys that showed that in most areas of the region no privately financed broadband development was planned within the next few years to bridge the existing digital divide.

Objectives

The main objective of the measure is to provide cities and communities in the five administrative districts of north Hesse with fast Internet access since this goal could not be achieved with private investments. To achieve this goal:

- A sustainable regional fibre optic network with a length of around 2 000 Km will be created on the basis of an FTTC (fiber to the curb) concept,
- Small and medium-sized enterprises and citizens in north Hesse should have access to fast internet with bandwidths of 30 Mbit/s to 50 Mbit/s, with the use of vectoring up to 100 Mbit/s.

Activities

In February 2014, the five districts of north Hesse joined forces to found the infrastructure company Breitband Nordhessen GmbH. The company undertook the full coverage of a high-speed Internet and is responsible for the entire coordination and expansion of a fibre optic network in the northern Hessian districts. Breitband Nordhessen GmbH is the owner of the entire passive infrastructure (empty conduits, glass fibre, etc.), which will be built by a general contractor. This passive infrastructure will be leased to Netcom Kassel. After completion of the passive network, the network operator

(Netcom Kassel) will provide the active network technology and install it in the distribution cabinets. In February 2017 the decision to promote broadband expansion in northern Hesse using with 20m EUR of EAFRD funding was approved, which will enable broadband expansion to reach the profitability zone more quickly.

Milestones of work since 2014:

- Proof of market failure based on market surveys and needs surveys;
- Europe-wide tender for the network operation and commissioning of Netcom Kassel in February 2015;
- Approval of the entire project by the European Commission in April 2015 within the framework of an individual state aid EU notification;
- Secured overall financing via Wirtschafts- und Infrastrukturbank Hessen and the European Investment Bank;
- Broadband North Hesse received the 'European Broadband Award 2015' in November 2015;
- Second Europe-wide tender for the construction and commissioning of Weigand Bau GmbH as general contractor in June 2016;
- In September 2016 the first ground-breaking ceremony in all five districts took place and the construction work started;
- Network openings of the NGA Cluster Nordhessen since April 2017 in the first towns in all five rural districts.



Main Results

By the end of 2017, 850 km of the passive pipe system had been laid to connect more than 570 locations. The infrastructure was laid far from the larger cities in northern Hesse to provide fast broadband network via fibre optic cable. The contractually agreed target of 650 km was thus exceeded by 40%. In May 2018, more than 1 000 km of the planned pipeline system, and thus more than half of the planned 2 000 km, had been built. Around 70% of the expansion target will be achieved by the end of 2018 and the laying of empty conduits and cables is to be completed by the end of 2019. At the end of 2017, 112 of the 570 planned locations were under construction and over 650 of the 1 400 distribution cabinets had been installed.

During the construction of the new broadband network, empty conduits are being laid into which fibre optic cables will later be fitted, which are essential for fast data transport. So-called multifunctional housings in the individual districts serve as connecting stations in which the active technology of the network operator is installed. From there, the data signals of the new fibre optic network are transported to the households via the existing copper cables with high bandwidth.

During the construction work, the fibre optic cables are built in a ring structure to ensure that there will be no downtime in the event of possible line damage. The aim of the expansion is to create a sustainable infrastructure that links the entire rural area.

Once the first functional sections have been completed, customers in the respective areas can be connected to the active network immediately.

Once the passive infrastructure has been completed by BNG, the active technology will be installed by Netcom Kassel. As the network operator, Netcom then has to put electricity in the transfer points in the localities, connect the fibre optic cable to the copper cable of the telephone connections, sign the contracts with the customers and physically connect the individual household. In order that the respective sub-region can ultimately be supplied with the data signal, however, it must also be connected to the higher-level supply ring of the core network. Even if the infrastructure in a town is already being relocated, it may still take time to receive the signal, if the supply ring itself has not yet been built to the location.

Key lessons

A precondition for the success of Broadband Nordhessen was the development of a viable business and operator model. By merging the five districts, the cost of the expansion of the passive infrastructure was reduced. Given that the network remains the property of the districts and is leased, this is an investment that will be refinanced in the long term.

Central challenges of the project are the interface management between different stakeholder groups and interests resulting in a high need for communication, and the complexity of contracting (multiple Europe-wide tenders) as well as state aid law (EU notification).



Additional sources of information

<https://ec.europa.eu/digital-single-market/en/news/five-projects-got-first-ever-european-broadband-award>