



TRAFICOM BROADBAND WEBINAR

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[CEBFUND.EU](https://www.cebfund.eu)



THE PRESENTERS

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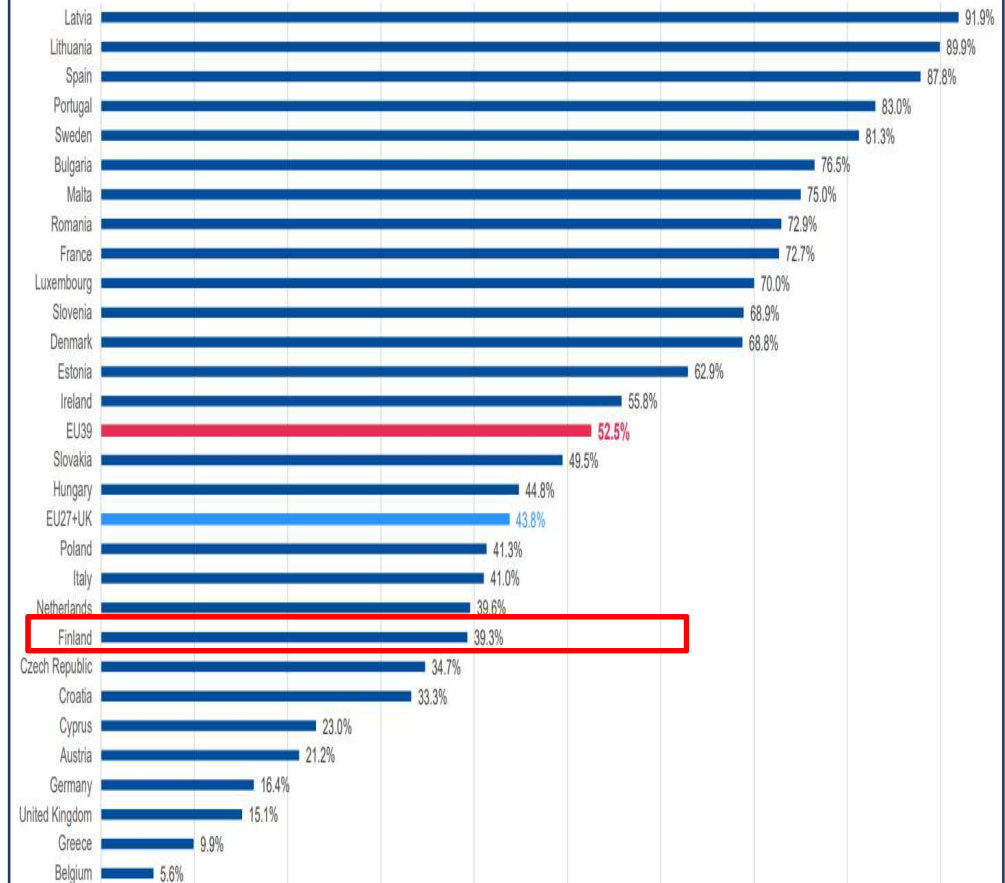
FIBER AND FINLAND

Finland Connectivity's Status¹

- Finland has a significant divide regarding fixed network coverage, which may be explained by the lack of economic incentives to roll out the network in its sparsely populated areas but also its mobile focus up to now
- While Finland has excellent total fixed very high capacity network (VHCN – cable or fiber) coverage (67% compared with an EU average of 59%), it scores low (9.3%) in rural areas (27.8% EU average).
- Overall Finland is the Nordic exception in terms of Fiber To the Home (FFTH) coverage and is well below the EU average
- However, according to Traficom, **fast fixed connections are being built steadily, especially outside the largest cities.** In many respects, the success of smaller municipalities with fixed networks is due to the active optical fiber cooperatives that have built regional optical fiber networks with the help of state aid for broadband. The subsidy is granted to areas where market-based broadband connections are not developing quickly enough, and the mobile network cannot offer sufficient connections. **The municipalities in the leading areas have played an active role in supporting the construction of optical fiber network**

EU's overview

FTTH/B coverage in EU27+UK as of end of 2020²



¹ All the data are from DESI 2021 Report

² FTTH/FTTB Market Panorama in Europe 2021 report, FTTH Council Europe

FIBER IS A BETTER, FASTER TECHNOLOGY THAN 5G BUT ALSO AN ENABLER OF 5G

5G and fiber Networks

- **Fiber optic cables** create most of the internet physical infrastructure around the world. Fiber cables are used in the backhaul network to meet the substantial growth in data and connectivity of today's modern society.
- **5G** is the 5th Generation of mobile networks. **5G speed will vary depending on how operators design their networks and how many users will simultaneously use the network.**
- 5G offers an **extra-low latency compared to 3G or 4G** which will open up new applications in the Internet of Things space (smarter cities).
- A **key factor of 5G efficiency is fiber availability**, as there's no point in having ultra-fast speeds if the backhaul is not there to support it.
- For a 21st century city, not to have a fiber network will be a bit like some of the cities which did not want a train station at the end of the 19th century

Quick comparison

Parameter	5G	Fiber Optic
Technology	5G is the Fifth Generation of mobile wireless systems, which uses radio waves for sending and receiving data	Uses light to transmit data through fiber optic cables
Speed	20 Gbps download link and 10 Gbps uplink Depends of network capacity	Theoretical speed is upto 1 petabit per second, however practical speed is upto 100 Gbps
Reach	Upto few 100 meters	Signal over Fiber can travel upto 70 KMs without losing signal
Response Time	Slower than fiber optics and possible impact of rain	Faster than 5G
Last mile	Uses Wireless as last mile technology which can be roiled out in very short time	Fiber Optic as last mile takes a lot of manhours and money for laying
Rollout time	Very low	Very high
Installation Cost	Much lower that Fiber optic	Very high cost of Fiber including its laying
Operational Cost	Very high, upto 5 times to that of fiber connectivity	Much lower than 5G

HOW CEBF CAN HELP FINLAND

WHAT WE ARE LOOKING FOR

CEBF Main Investment Criteria

1. Supporting a local community in funding **fiber / broadband deployment with up to 30m€ of equity** (usually, our assets lever the equity ticket to obtain third party debt to fund bigger projects);
2. We can support a team of **local entrepreneurs or a municipality**;
3. We can invest in an **existing company or in a new venture**;
4. We are not managers, so we need to **partner with a management team**;
5. At some stage, in ca. 7 years after the initial investment, we will be looking at exiting our investment, crystalizing value creation for a community;
6. We favor **open access networks business model**, which we deem the best way to minimize investment costs while maintaining price competitiveness for the citizens and end-users.

WHO WE ARE

Summary

- **Connecting Europe Broadband Fund (“CEBF”)** is a growth capital fund specifically dedicated to investing in early-stage broadband network infrastructure in Europe
- **Investors** in CEBF include public institutions - the European Commission, EIB, KfW, CDP and CDC – as well as several private institutional investors
- **First close** June 2018, €420m; **final close** June 2021, €555m
- CEBF has **fully commercial, industry standard fund governance and decision-making process**
- CEBF is managed by Cube Infrastructure Managers (“**CIM**”) and has a dedicated international investment team of professionals with in-depth industry and investment management experience based in Luxembourg
- CIM is an independent CSSF Regulated Alternative Investment Fund Manager with offices in Luxembourg and Paris. It has thus far raised **~€3.6 billion** through four funds including CEBF and has an international team of 49 professionals coming from 20 countries

Structure



Cube I	Cube II	Cube III	CEBF
▪ €1bn fund	▪ €1bn fund	▪ €1bn first close	▪ €555m fund
▪ Fully invested	▪ 10 investments	▪ 2 investments	▪ 8 investments
▪ 14 investments (92% divested)			

Highlights

Focused investment criteria	Sizable, multinational team with industry know how
Ready to invest, straightforward process	Strong and diversified investor profile

WHAT WE HAVE ACHIEVED TO DATE

Partnering with local communities



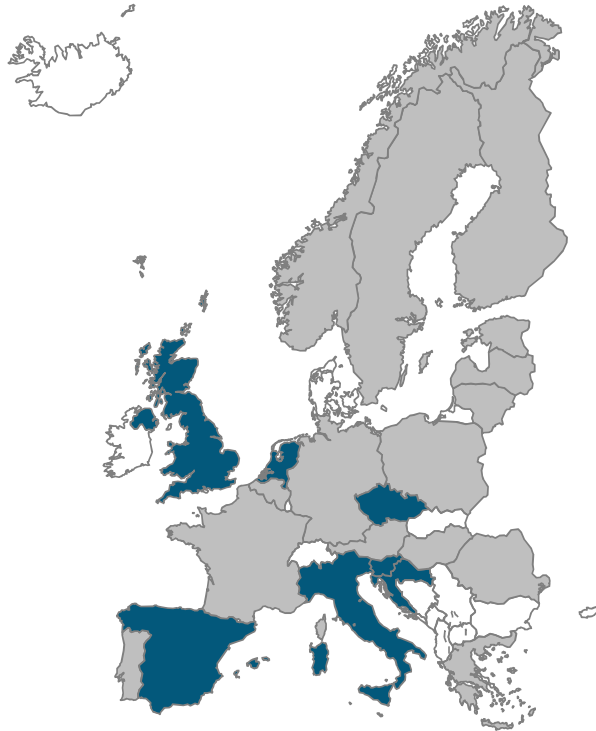
8 investments to date, aggregated capital committed €219m



Situation: Focus so far has been on regional Europe



Strong growth potential of the assets and **substantial pipeline**



CEBF PORTFOLIO

Rune, Croatia: €30m equity

Call Flow, UK: €30m mezzanine

Rune, Slovenia: €30m equity

Fortem, Spain: €30m equity


Bank, Czech Republic: €8.6m equity approved. Potential to reach €30m equity

Calais, Netherlands: €30m equity

Nesta, Italy: €30m equity

Manga, Spain: €30m equity

 Signed deals

 Pipeline projects

Q&A

SELECTED CEBF INVESTMENTS

CEBF PORTFOLIO – RUNE CROW (CROATIA)

Portfolio overview

- **Status:** Current
- **Investment Date:** January 2019
- **Location:** Northwest Croatia
- **Sector:** Broadband (FttH)
- **Business model:** Open-access network
- **Life cycle:** Greenfield
- **Total CAPEX:** €43m



Deployment targeted geographies

- The project covers rural areas in Primorje-Gorski Kotar and Istria regions, the two north-western counties in Croatia



----- Area of deployment

Project overview

- RuNe Crow intends to deploy a state-of-the-art high-quality fibre-to-the-home (FttH) network for residential, business and public administration
- RuNe Crow is a greenfield broadband project facilitating the transition towards a European Gigabit Society
- The Project aims to cover an addressable market of over 135,000 locations by the end of 2022, providing GPON (*Gigabit Passive Optical Networks*) wholesale bit stream FttH services to retail ISPs (*Internet Service Providers*) on an open access basis
- The Project would will offer a substantial step change in broadband access in Croatia's underserved rural areas

Transaction overview

- **Max. Investment:** €30m
- **Instrument:** Equity
- **Transaction rationale:**
 - RuNe Crow is a promising FttH project in the underserved rural area with growing broadband demand, potentially leading to a single network situation on the infrastructure level
 - RuNe Crow is ideally positioned to propose wholesale offer with attracting price
 - RuNe Crow Sponsor has extensive experience in building and operating broadband network in Croatia, developed favorable relationship with the municipalities

CEBF PORTFOLIO – RUNE ENIA (SLOVENIA)

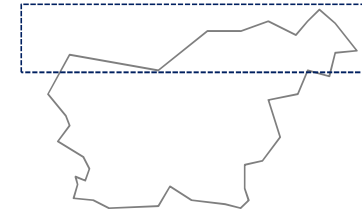
Portfolio overview

- **Status:** Current
- **Investment Date:** April 2019
- **Location:** Slovenia
- **Sector:** Broadband (FttH)
- **Business model:** Open-access network
- **Life cycle:** Greenfield
- **Total CapEx:** €167m



Deployment targeted geographies

- RuNe Enia will deploy an FttH network in three phases, in rural areas of 163 municipalities, spread all over the country



----- Area of deployment

Project overview

- RuNe Enia is to deploy a high-quality FttH network passing through 246,000 homes in the rural areas in 163 out of 212 municipalities in Slovenia
- RuNe Enia Sponsor has developed a similar network (VAHTA) in southwest rural Slovenia and built up good partnerships with local retail ISPs such as A-1 and Telekom Slovenije
- Based on the Sponsor's successful experience in VAHTA, Enia would provide GPON (*Gigabit Passive Optical Networks*) wholesale FttH service to retail ISPs (*Internet Service Providers*) on an open access basis
- Enia's network would greatly promote the Next Generation Access broadband coverage in Slovenia

Transaction overview

- **Max. Investment:** €30m
- **Instrument:** Equity
- **Transaction rationale:**
 - RuNe Enia's network will commercialize upon its completion since VAHTA will transfer the ISPs' contracts to Enia
 - RuNe Enia Sponsor has 10-year experience in planning and rolling out a broadband network in Slovenia, for example, VAHTA achieved 68% take rate within its network
 - Crow and Enia projects will generate synergies under RuNe Group and become the first cross-border open-access FttH network in European Union

CEBF PORTFOLIO – FORTEM (SPAIN)

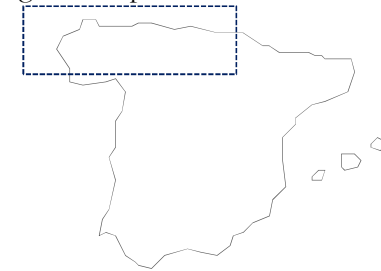
Portfolio overview

- **Status:** Current
- **Investment Date:** March 2020
- **Location:** Spain
- **Sector:** Broadband (FttH)
- **Business model:** Open-access network
- **Life cycle:** Greenfield
- **Total CapEx:** €116m



Deployment targeted geographies

- Fortem will deploy an FttH network in three phases, in rural and semi rural areas of Galicia region of Spain



----- Area of deployment

Project overview

- Fortem is to deploy a high-quality FttH network passing through 400,000 units in the rural and semi rural areas of Galicia region in Spain
- Galicia is the 5th largest region with over 1m permanent households and lowest fiber coverage in Spain
- Commercial strategy includes one national and one local ISP as anchor tenants with significant uptake agreements
- Technical infrastructure to be built on latest XGS-PON technology which is most reliable, highest throughput available

Transaction overview

- **Max. Investment:** €30m
- **Instrument:** Equity
- **Transaction rationale:**
 - Management of the Sponsor has already deployed c. 780 K homes and installed the only real OAN network (GITPA¹)
 - Galicia is the region with the lowest fiber coverage in Spain
 - Vibrant local ISP market enhances take up rate
 - Privileged access to existing passive infrastructure reduces roll out costs

(1) Gestión de Infraestructuras Públicas de Telecomunicaciones del Principado de Asturias, S.A

CEBF PORTFOLIO – MANGA (SPAIN)

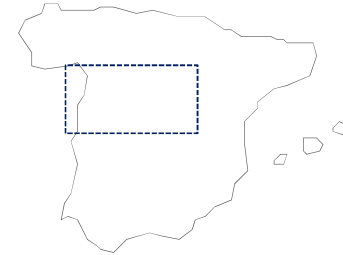
Portfolio overview

- **Status:** Current
- **Investment Date:** July 2021
- **Location:** Spain
- **Sector:** Broadband (FttH) and backbone
- **Business model:** Open-access network
- **Life cycle:** Greenfield
- **Total CapEx:** €42m



Deployment targeted geographies

- Manga will deploy an FttH network in rural and semi rural areas of Castilla and Leon as well as in Extremadura, two rural location of Spain



----- Area of deployment

Project overview

- Manga will deploy a high-quality FttH network based on its on backbone in order to reach the most rural areas of the targeted locations
- Building its own backbone in locations where there is no other will allow the Company to reduce the risk of overbuilding to almost zero
- The project aims to pass over 160,000 units in the rural and semi rural areas of several provinces across Castilla and Leon and Extremadura
- Commercial strategy includes to sell through local operators as well as through the national ones
- Technical infrastructure to be built on latest XGS-PON technology which is the most reliable

Transaction overview

- **Max. Investment:** €30m
- **Instrument:** Equity
- **Transaction rationale:**
 - In this transaction, CEBF has partnered with Gestioniza, a local construction Company that will build the FTTH network
 - In this occasion the construction risk has been passed to the Sponsor through an EPC contract
 - Management of the Sponsor has already deployed c. 300 K homes and installed several FTTH deployments to leading companies in Spain such as Adamo or MasMovil.
 - Vibrant local ISP market enhances take up rate
 - The lack of existing passive infrastructure reduces the risk of overbuilding