

***REDFIBA™***  
***a solution to improve copper data rate***

**RedFiBA™** project is a result of years of empiric studies of studies and empiric tests both in theory (use of computing programs) and practice (HW and SW development and relative performance measurements in the field of empowering copper FTTC network empowerment).

The suite of patented solutions offers off-the-shelf” techniques with a rapid implementation.

It provides a roadmap which overcomes a simple technological breakthrough, providing an efficient national strategy of network evolution favoring a timely Ultra Broad Band (UBB) development at national level.

A business case **“Italy – Telecom Operator Scenario”** has been developed providing up to 6 different scenarios with technical and economic measurements for implementation of patented solutions.



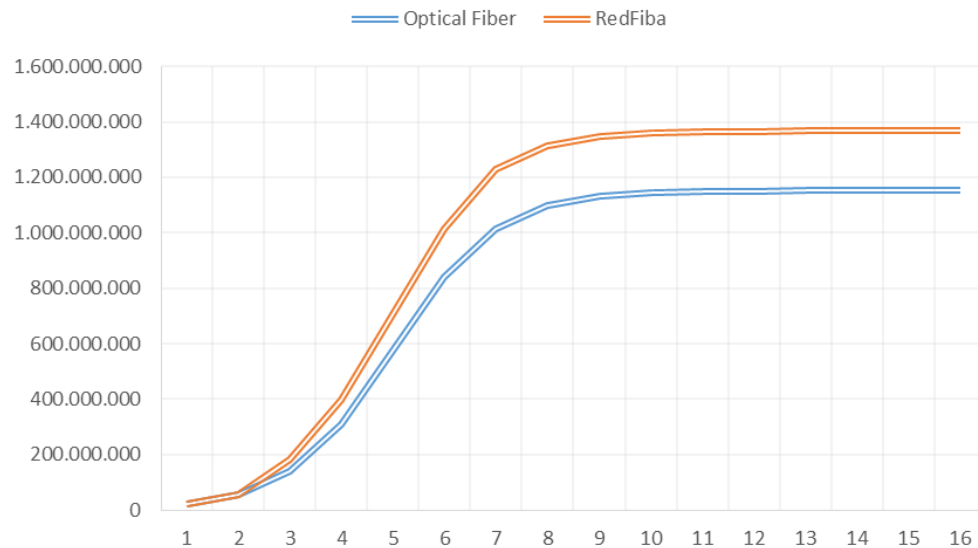
**REDFIBA** permits obtaining fiber-like data-rate on copper networks

# Business model

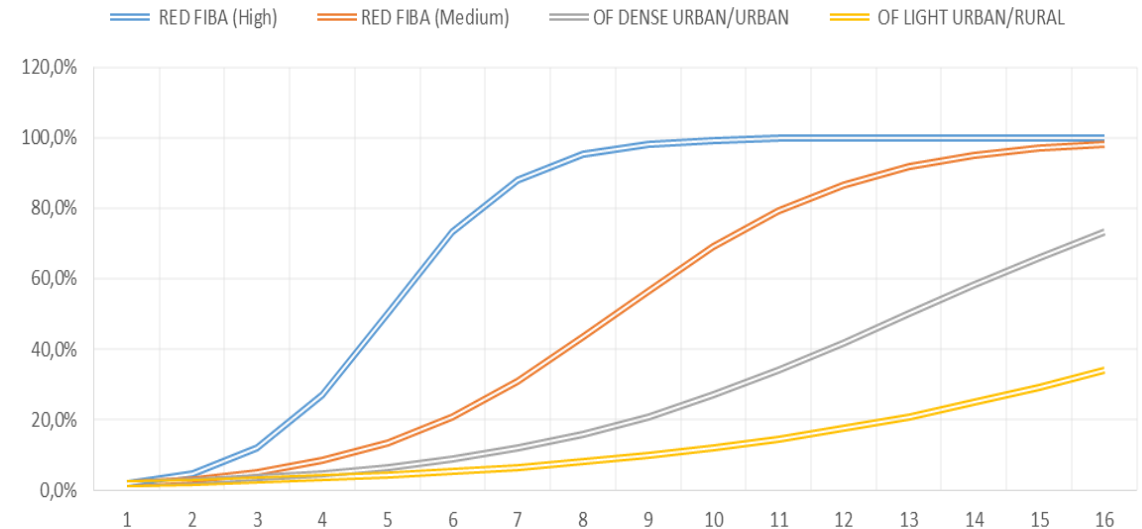
- **REDFIBA<sup>®</sup>** (high penetration)
- **REDFIBA<sup>®</sup>** (medium penetration)
- Optical Fiber Dense Urban/Urban (high penetration)
- Optical Fiber Light Urban/Rural (medium penetration)

- Ncab = 20.000 (number of Cabinets considered)
- Ndpxcab = 10 (number of DPs per each Cabinet)
- N\_linee = 200 (number of copper lines per each cable)
- liv\_p = 80% (maximum penetration for REDFIBA)
- POP= 9.600.000 (resident inhabitants)
- n\_user = 3.200.000 (maximum served families)

REVENUES RF+OF



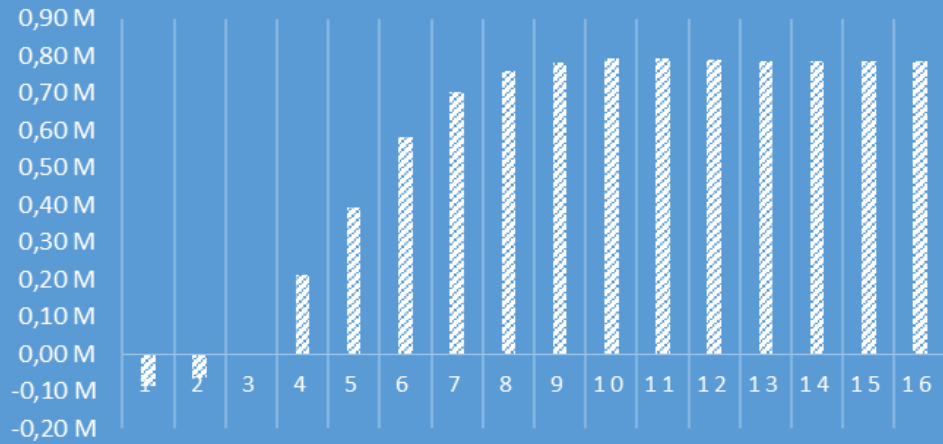
PENETRATION RATES



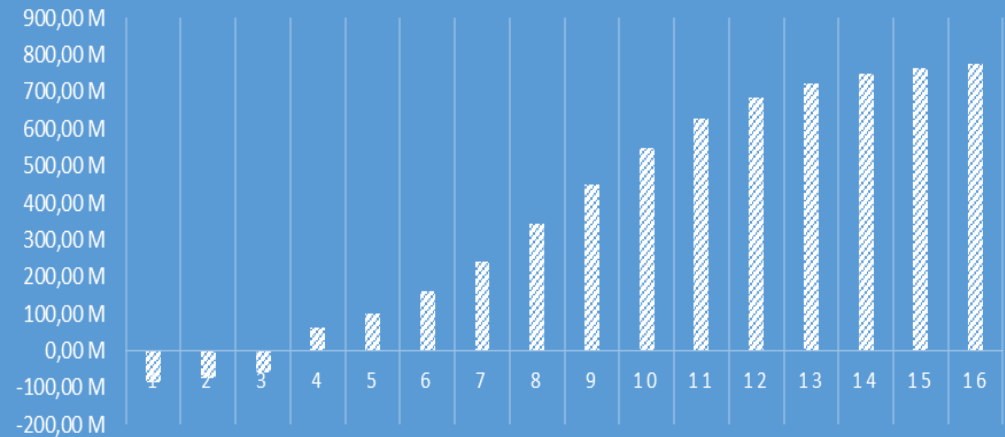
Note: RF+OF means both **REDFIBA<sup>®</sup>** and optical fiber are in place (cooperative scenario).

# Financial metrics

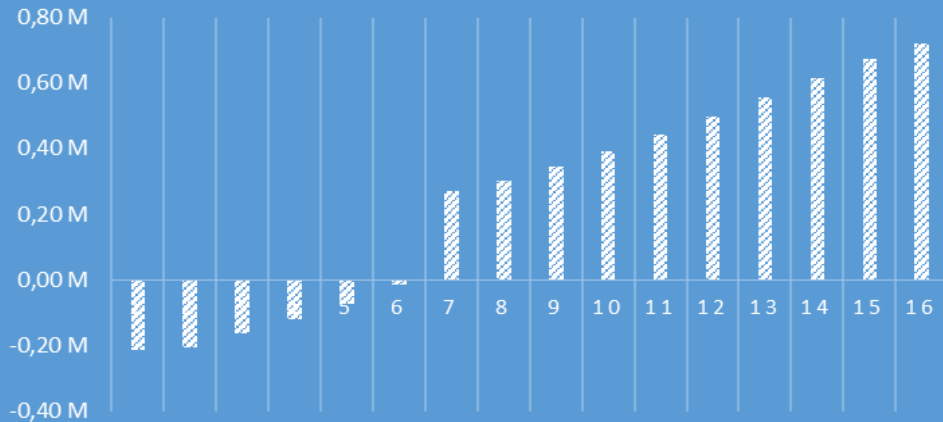
## FCF: REDFIBA (HIGH)



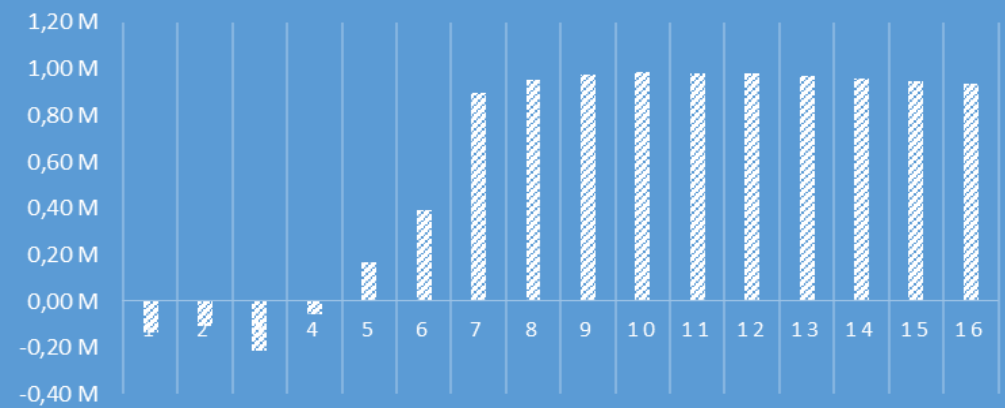
## FCF: REDFIBA (MEDIUM)



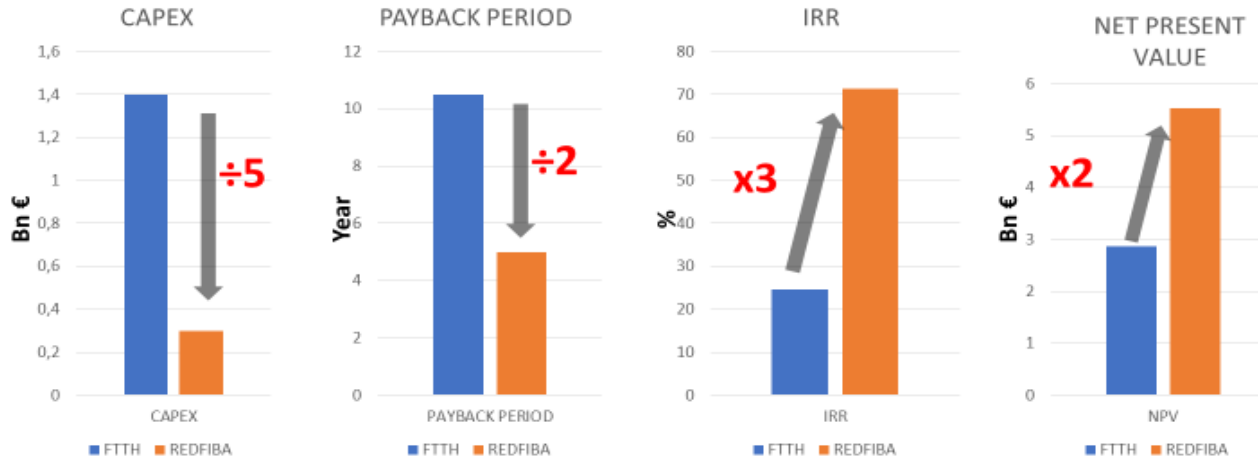
## FCF: OPTICAL FIBER (DENSE URBAN)



## FCF: REDFIBA + OPEN FIBER



# Financial metrics



NPV (\*) Perpetual growth rate @ 1,5%  
 NPV (\*) (assumptions years, not dates)  
 CAPEX (\*\*) 3 years for RED FIBA  
 CAPEX (\*\*) 6 years for OPTICAL FIBER  
 (+) 15% users

Scenarios	NPV (*)	IRR	Payback Period	CAPEX (**)
RED FIBA (High)	6,29 bn	90,1%	4 Y	0,30 bn
RED FIBA (Medium)	4,75 bn	52,5%	6 Y	0,30 bn
<b>Fiber only</b> OPTICAL FIBER DENSE URBAN/URBAN	2,23 bn	21,4%	12 Y	1,40 bn
OPTICAL FIBER DENSE URBAN/URBAN 2 (+)	3,52 bn	28,0%	9 Y	1,40 bn
OPTICAL FIBER LIGHT URBAN/RURAL	0,02 bn	-1,4%	over 16 Y	2,24 bn
RED FIBA + OPTICA FIBER (High) (+)	6,81 bn	52,2%	6 Y	1,70 bn