Cross-Practice Views On Rating European Digital Infrastructure

Nov. 14, 2024

S&P Global
Ratings

This report does not constitute a rating action

Meet our speakers

Infrastructure & Project Finance

PABLO LUTEREAU
Managing Director
Chief Analytical Officer Infrastructure & Project finance
Madrid
+ 34 91 423 3204
pablo.lutereau@spglobal.com

KARL NIETVELT
Managing Director
Head of EMEA Infrastructure & Project finance
Paris
+33 14 420 6751
karl.nietvelt@spglobal.com

GONZALO CANTABRANA
Managing Director
Sector Lead EMEA Infrastructure & Project finance
Madrid
+34 91 389 6955
gonzalo.cantabrana@spglobal.com

Corporate

MARK HABIB
Managing Director
Sector Lead EMEA Telecom and Technology
Paris
+33 61144 3020
mark.habib@spglobal.com

Structured Finance

DARRELL PURCELL
Director
EMEA Structured Finance
London
+35 3156 80614
Darrell.purcell@spglobal.com

Digital infrastructure assets

Narrowing our definition of digital infrastructure

- Infrastructure typically includes assets that are fundamental to the function or provision of public services.
- The assets could provide a direct benefit to society or consumers, or an indirect benefit, via a sector that provides a service to society.
- Through that lens, we view low-risk digital infrastructure assets as those that benefit from:
  - A strong competitive advantage,
  - Long-term ownership of critical telecom assets, and
  - Stable and predictable cash flows and low-risk to revenues due to contractual arrangements and/or regulation.
- Digital infrastructure assets with those characteristics include:
  - Data centres,
  - Fibre networks, and
  - Telecommunication towers.

Rating approach largely hinges on structural considerations

Assets are not the primary differentiator

	Corporate infrastructure	Project finance	Asset-backed securities
Issuer	Corporate	Limited-purpose entity	Bankruptcy-remote special-purpose vehicle (SPV)
Construction risk	Limited to expansion	May be present	Mitigated or limited credit
Operating risks	Full exposure	Full exposure	Limited (transferable and replaceable)
Renewal risk	Unmitigated (may have full market exposure)	Quantifiable (with impact on market exposure).	Quantifiable (re-leasing risk factored in)
Debt (typical)	Senior secured or unsecured	Senior secured	Multi-tranche, secured
Creditor protections	Typical corporate debt with limited covenants or security	Ring-fenced structure with covenants and security over assets, accounts, and key contracts	Ring-fenced with security over the assets and/or cash flows, and the ability to liquidate and sell
Debt features	Short- or medium-term legal final maturity dates	Medium-term legal final maturity dates	Shorter anticipated repayment date (ARD) with longer legal final maturity dates
Refinancing risk	Allowed--assessment of maturity profile and liquidity	Allowed--reliance on operating cash flows	Expected but not mandatory at ARD , reliance on both operating cash flows and liquidation value

S&P Global
Ratings

Data Centers

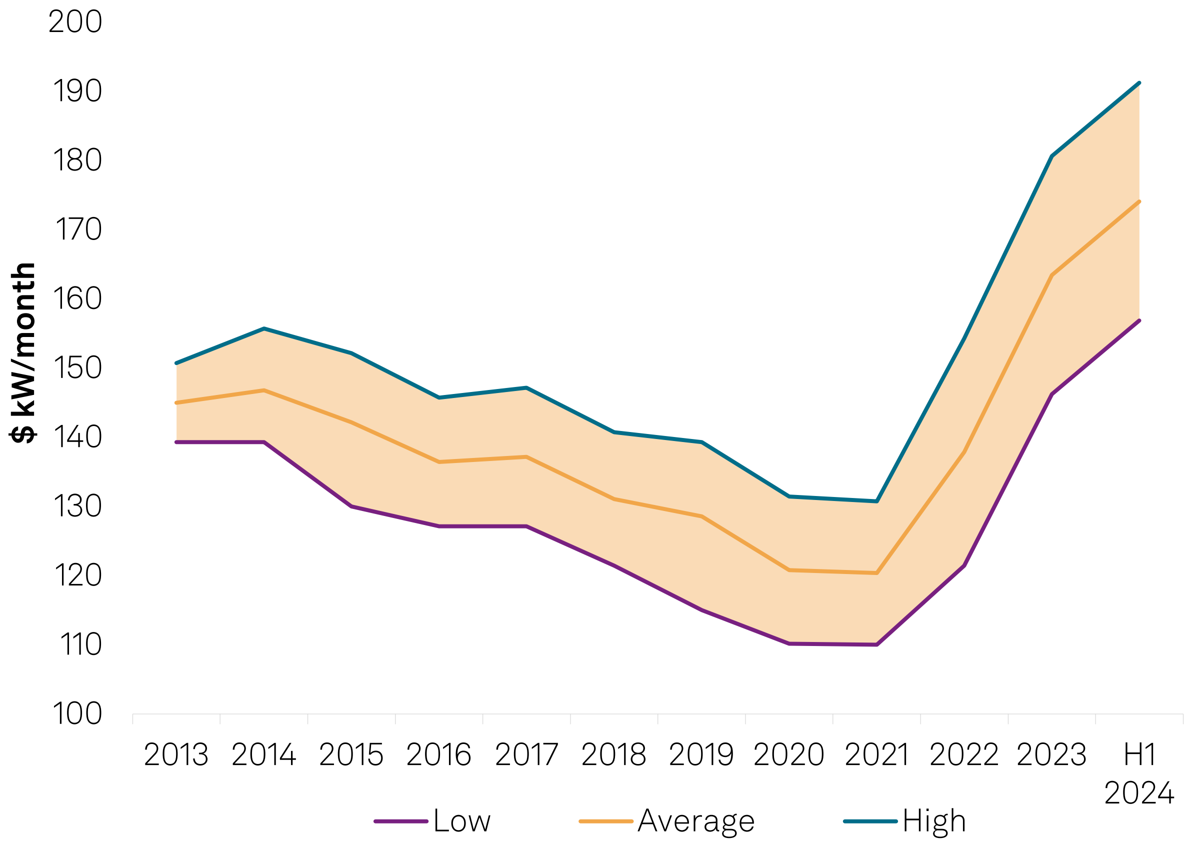
Key analytical considerations

This report does not constitute a rating action

Data Centers | Today's boom is a contrast to the prior decade

- Increasing hyperscale facility size and economies of scale eroded rental prices during the 2010s.
- Booming demand from AI and cloud services has more recently outpaced supply and continues to fuel growth-- 80% of all U.S. new builds have been pre-leased.
- Medium-term rental prospects are underpinned by demand growth and restricted energy supplies that will constrain capacity additions.
- Long-term oversupply isn't our base case, but difficulties in monetizing AI could prompt a rethink on investment.

Rental rate evolution for U.S. hyperscale facilities



KW—kilowatt. Sources: CBRE, S&P Global Ratings.

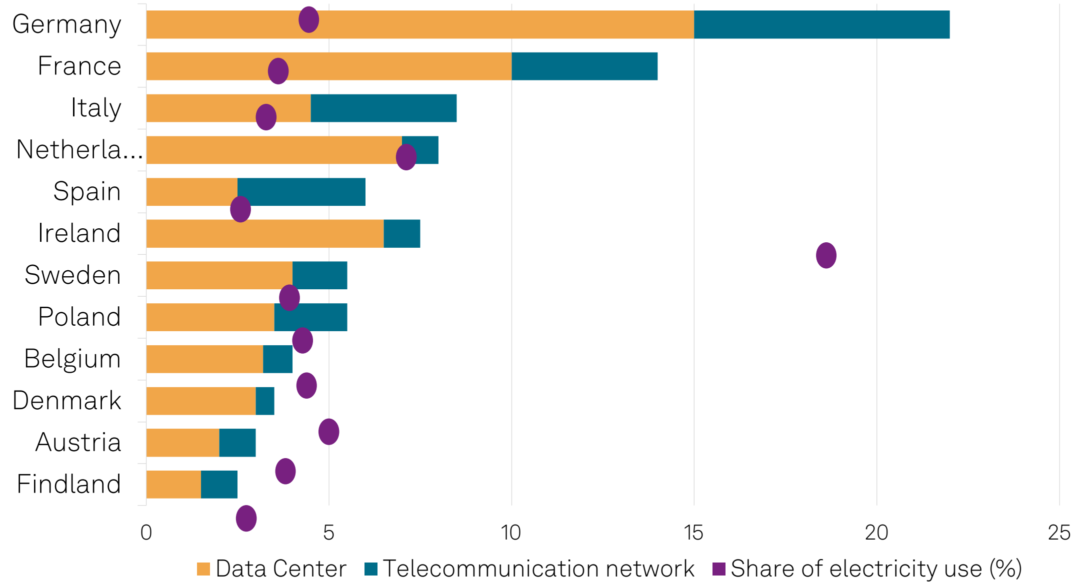
S&P Global Ratings

Data Centers | Energy needs will become a key constraint

Securing energy, including generation and transmission, is a key requirement for new data centers

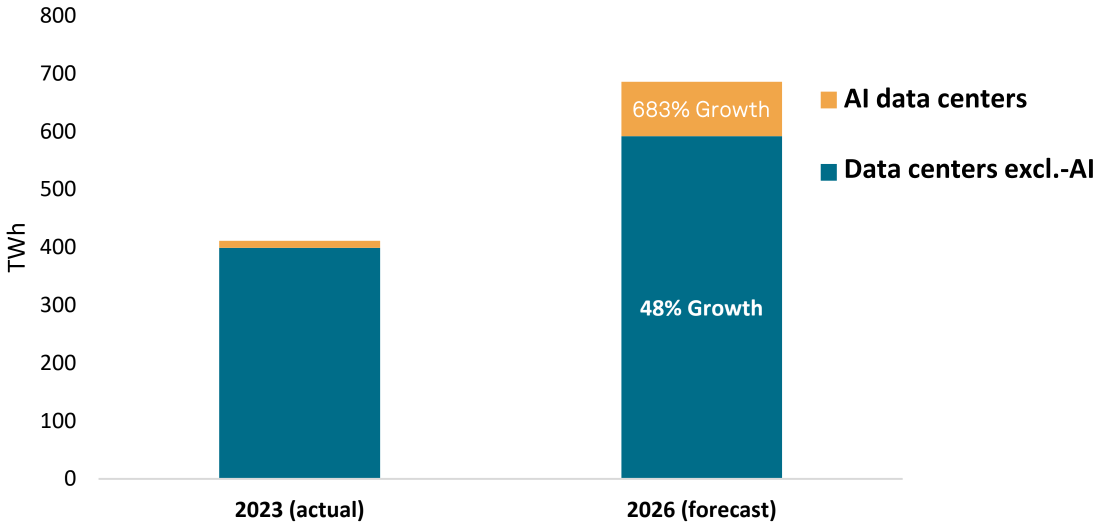
Digital infrastructure energy use

Estimation by country and use (TWh)



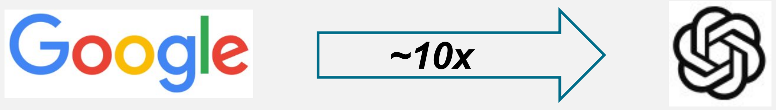
TWh—terawatt hour. Source: European Commission.

Global data center energy demand



TWh—terawatt hour. Source: European Commission.

- Data centers consume about 1.8%-2.6% of total electricity output.
- Telecommunication networks use an estimate of 1%-1.2% of the total.
- Together digital infrastructure consumed 70-95 Terawatt hours (TWh), equivalent to 2.8%-3.8% of the total.



- ChatGPT requests consume about 10x more energy than a Google query.
- AI, with its energy-intensive large language model (LLM) training, is expected to drive about 30% of the increased energy demand.

Data Centers | Key differentiating factors

Lines are blurry between data center subsectors, but differences could have a material effect in our assessment

- We consider wholesale hyperscalers and colocation interconnect facilities to have the strongest credit profiles for data centers.

	Strengths	Weaknesses
	Hyperscalers benefit from scale and energy supply barriers to entry.	Long term: technology, overbuild, and risk of insourcing by clients could affect demand and re-contracting risk.
	Colocation facilities benefit from difficult to duplicate network-effects from their client base.	Shorter contract lengths for interconnection facilities.
	Both are critical infrastructure for cloud computing, AI, internet onramps, etc.	Lack of regulatory protections vs. other digital infrastructure.
+	Both have stable contracted revenues and rising demand that outstrips expected supply.	Development risk for speculative builds.
	Both have real estate-like leases that support high and stable margins.	High energy requirements could conflict with public policy and company-specific energy transition goals.

- **Key differentiating factors within the segment**: Contract structure, location, land ownership, scale, age, access to power/energy efficiency, utilization and churn rates, diversity, and quality of tenants.

Data Centers | Location is strategic for data center deployment

Implications can include performance, costs, and security

Network access & stability

- Availability of access to the electricity network.
- Network planning, investments, and condition of existing infrastructure.
- Grid balancing.
- Connectivity to other countries and regions. (i.e. Virginia is the principal host of U.S. subsea cables).

Energy supply & prices

- Competitive energy prices.
- Region's energy mix and growth pipeline.
- Favourable power purchase agreements (PPAs) contractual features.

Geographical location

- Availability of land.
- Availability of water for cooling systems.
- Low network latency, distance to end-users.
- Population density and proximity to users.
- Community acceptance.

Business enviroment

- Transparency of policies or regulatory framework.
- Tax incentives and policy incentives.
- Established tech enviroment and infrastructure.
- Availability of specialized services.
- Data protection laws.

Data Centers | Key contractual and financial considerations

Creditworthiness of off-takers

- What is the creditworthiness of off-taker(s)?
- Are there parent guarantees?
- Is there a diversified pool of off-takers?

Undertaking agreement (lease)

- Is it a "hell or high-water" (Triple Net)?
- What are the key performance indicators (KPIs) in the contract?
- What is the compensation in case of unilateral termination?
- Is the lease at arms-length basis?
- Does the agreement transfer the cost of electricity to the off-taker?
- Is the debt repayment exposed to extensions or recontracting?

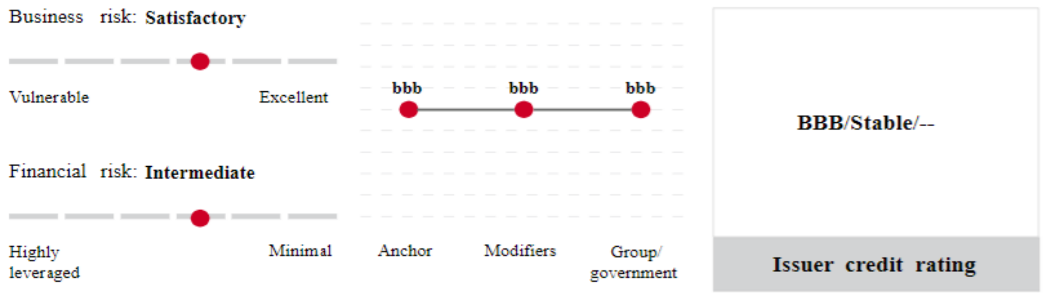
Our view on recontracting (market risk) will be related to our view on the quality of the asset

Capital structure

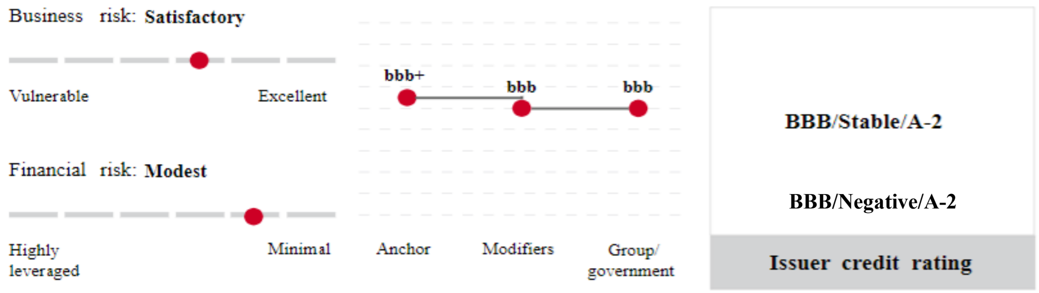
- What is the debt amortization while cash flows are contracted?
- Are there mitigants should data center rents change materially in the future?

Corporate | Examples of corporate data centers

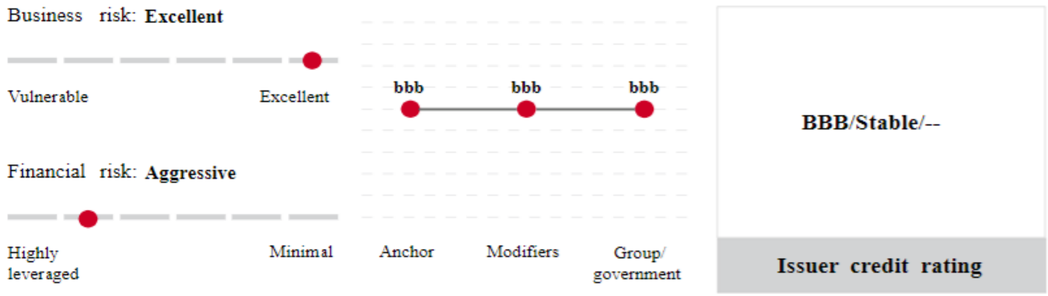
Digital Realty Trust Inc.



Global Switch Holdings Ltd.



Equinix Inc.



Project Finance | Plenary Properties NDC GP (BBB+/Stable)

- Plenary Properties NDC GP (NDC) is a special-purpose vehicle (SPV) that the Ontario government selected in 2008 to design, construct, finance, and operate a data center for the Ministry of Government Services.
- The project completed construction in 2010 and is now in the operations phase.
- NDC benefits from an availability-based payment regime that covers debt service and shields it from any market risk. The project receives monthly payments that include three components: a capital payment, an operations and maintenance (O&M) payment, and a life-cycle payment. The monthly payments are subject to performance deductions or energy cost increases, which it fully passes down to service provider JCLP.
- Minimum debt service coverage ratio (DSCR) and median DSCR of 1.14x for senior debt.

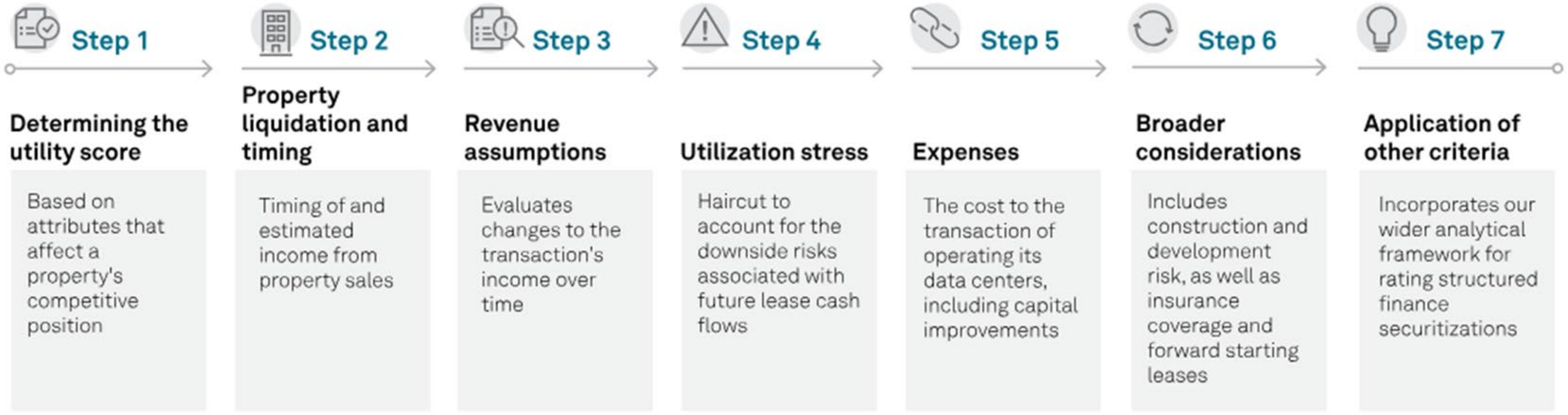
Ratings Score Snapshot And Peer Comparison

	Plenary Properties NDC GP
Operations phase SACP (senior debt)	
Asset class operations stability	1
Operations phase business assessment	1
Preliminary operations phase SACP	bbb
Downside resiliency assessment	Very high; +2 notches
Median DSCR impact	None
Debt structure impact	None
Liquidity	Neutral
Refinancing	None
Future value modifier	None
Holistic analysis impact	None
Structural protection impact	None
Counterparty assessment impact	-1 notch
Operations phase SACP	bbb+
Parent linkage and external influences	
Parent linkage	Delinked
Project SACP	bbb+
Extraordinary government	None
Sovereign rating limits	None
Full credit guarantee	None
Senior debt issue rating	BBB+

SACP--Stand-alone credit profile. DSCR--Debt service coverage ratio.

ABS & CMBS | Global data center ratings

- Seven U.S. programs and one U.K. asset-backed security (ABS) issuer rated up to the 'A' category. Three U.S. commercial mortgage-backed securities (CMBS) transactions rated up to 'AAA'.
- An ABS analysis is suitable when conditions, such as legal risk, are consistent with a structured finance rating, including on a bankruptcy-remote SPV. CMBS are backed by commercial mortgage loans.
- Typical ABS features: Five-year ARD, with cash sweep post ARD, longer-dated legal final, DSCR triggers, liquidation/disposition period, no construction risk.
- Utility score: Location, age, cost of power, power efficiency and redundancy.
- Cashflow analysis (tenant creditworthiness) and stressed real estate liquidation (refinancing is not assumed).



Source: S&P Global Ratings.

ABS | Global data center criteria

- Revenue: Estimate how lease income may change over time, and the size and stability of any other revenue sources available to the issuer. Each time capacity is leased to the same or a replacement tenant, we apply a haircut to the contractual rate.
- A base utilization stress incorporates the diversity of the tenant pool and lease tenor while considering the portfolio's historical performance and sector outlook.
- Apply a recessionary utilization stress to account for fluctuations in delinquency and occupancy over time. We allocate the utilization stress across the recessionary period, typically by applying a front-loaded 40/30/20/10 annual curve.
- Assess the cost to the transaction of operating the data centers. Typically, we model such expenses, and the cost of property management, as senior to liability interest. In addition, we make assumptions regarding the capital improvements necessary to maintain a facility's competitive position.
- Liquidation property value haircuts: For each property, we estimate the sales proceeds by applying a rating-specific haircut to the S&P Global Ratings' value. The haircuts are derived from the values found in the relevant CMBS criteria.

Our estimated disposition period	
Rating category	**Months to maturity of shortest-dated liabilities**
A	36
BBB	26
BB	18
B	12

ABS | Vantage Data Centers Jersey Borrower SPV Ltd. (A- (sf))

Vantage Data Centers Jersey Borrower SPV Ltd.	
Appraised value of data centers (mil. £)	1095
No. of data center campuses	1
No. of tenants	65
S&P Global Ratings' value (mil. £)*	583.4
S&P Global Ratings' weighted average cap rate (%)	8.5
CLP leased (kW)	111828
Capacity ramped (kw)	112000
Annualized adjusted base rent (AABR) (mil. £)	89.9
Turnkey (%)§	100§
Powered shell (%)§	0
% leases triple-net§	0
% leases modified gross§	100§
Weighted average remaining lease (years) (weighted by AABR)	8.7
Range of original lease (mos.)	9-185
Range of remaining lease (mos.)	1-185
Closing date DSCR	1.61
% of investment-grade tenants§	89.5
Largest five tenants (% of AABR)	91.2
Largest five tenants§	Tenant 1 (72.2%), tenant 2 (11.2%), tenant 3 (3.4%), tenant 4 (2.7%), and tenant 5 (1.7%)
Largest three business sectors§	Cloud (72.2%), software (15.9%), and technology (2.3%)
State concentrations§	Newport, Wales (100%)

- Vantage Data Centers Jersey Borrower SPV Ltd.'s class A-2 note issuance is a securitization of real estate and tenant lease payments for space and electrical capacity in two operating wholesale data centers (CW11 and CW13) managed by Vantage.
- Both of the data centers are located on one campus in Newport, near Cardiff, U.K., and have an aggregate appraised April 2024 value of approximately £1.095 billion. The S&P Global Ratings' value of £583.4 million is derived from an 8.5% cap rate and reflects a market value decline of about 47%.

S&P Global
Ratings

Shedding Light On Fiber

Corporate and project finance approach

This report does not constitute a rating action

Fiber | Network rollout is at different stages across Europe

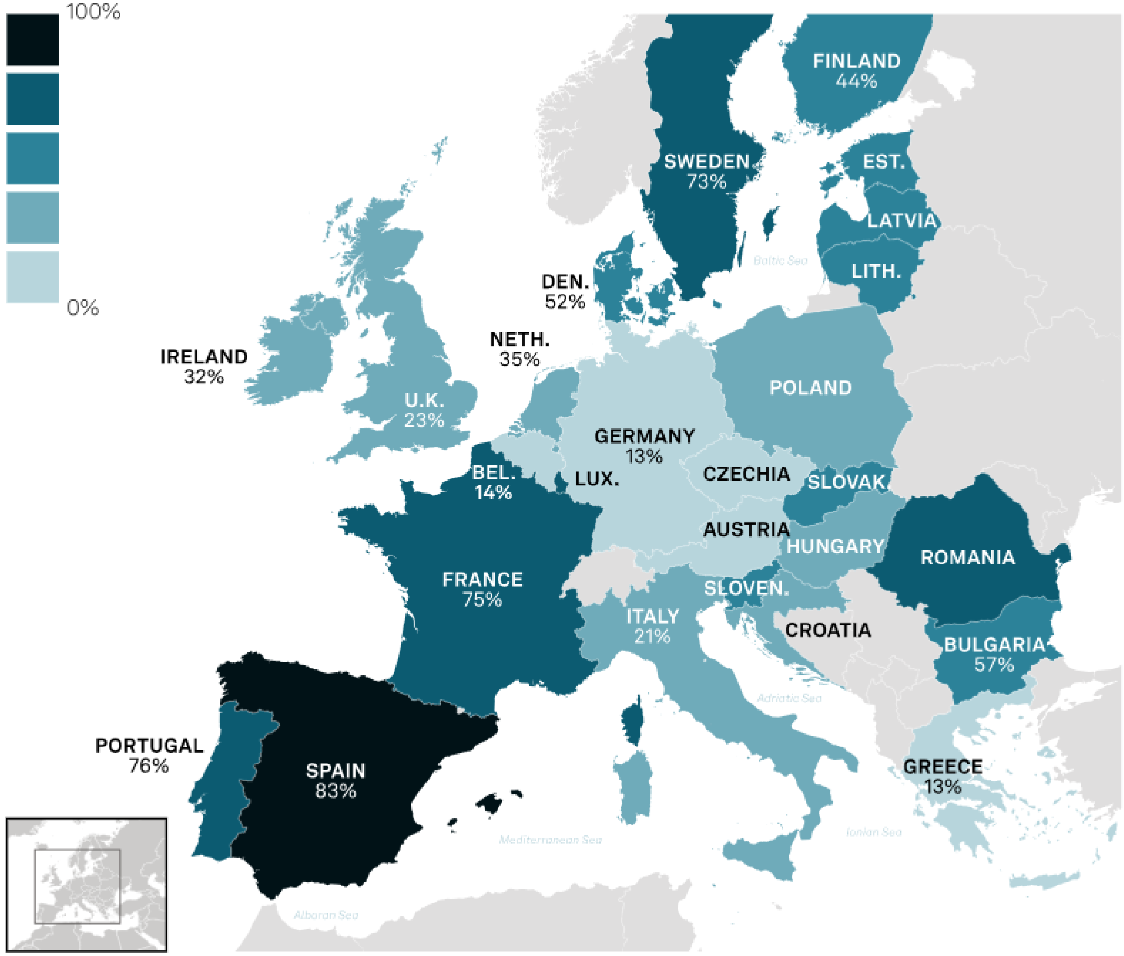
Interest in fiber networks continues to increase

- Spike in U.K. and German fiber investment.
- Economic woes could threaten rollouts.
- Market correction as smaller players begin to consolidate for scale.

Key trends in the sector

- Laggards in the fiber race will have to heavily invest to upgrade their networks.
- Joint venture structures are used to share investment costs and push the financial burden off balance sheet.
- Market penetration remains a critical growth driver.
- Opportunities in non-competitive regions thanks to regulatory protections--i.e., concessions.

European ranking in terms of fiber to the home
Penetration rate (%)



Source: S&P Global Ratings.

Fiber | Regulatory and market factors across Europe

Regulation derives from EU-level law making (European Electronic Communications Code - EU Directive 2018/1972), while national regulatory authorities (NRA) ensure the implementation of the law. Obligations/remedies are imposed if a significant market power (SMP) is identified in a market.

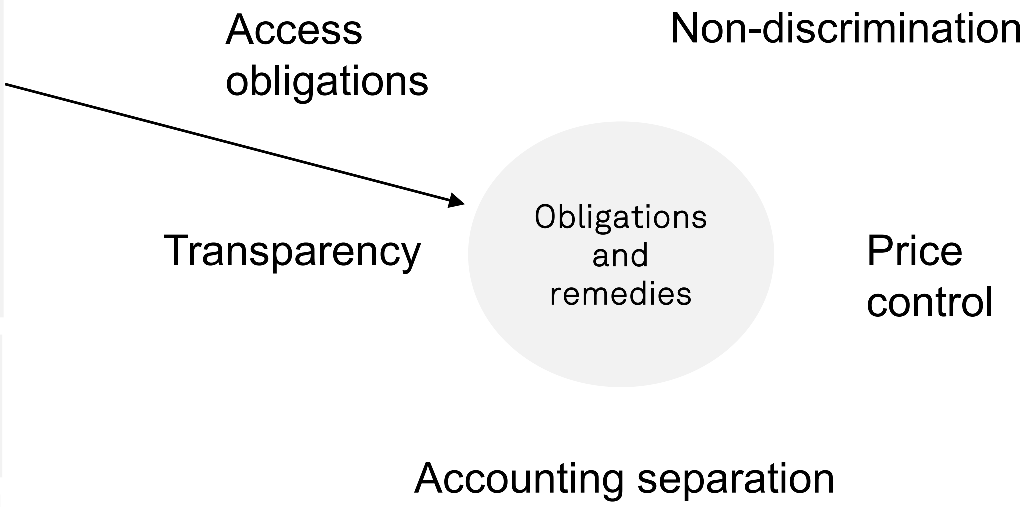
Regulated wholesale

Recent market analysis, identified an SMP in Italy (TIM), France (Orange), Germany (Deutsche Telekom), and Belgium (Proximus national level). The NRAs have imposed ex-ante obligations to the relevant entities. In Italy, the NRA imposed the full set of obligationsand is reviewing the effect of the TIM/Optics structural separation on the overall market.

No obligations

In Spain, Telefonica has been identified as an SMP in non-competitive areas--albeit marginal to the overall Spanish fiber market

Recent market analysis identified no SMP in Netherlands, meaning no obligations have been imposed on wholesale fiber providers.



Corporate | Key considerations for business risk assessment

Fiber coverage and penetration rate, market positioning, regulation and technology substitution

Key determinants in business risk assessment	Fiber coverage and penetration rate	Competitive landscape including market positioning	Regulatory environment	Technology substitution
Key risks	End-user take-up, competing overbuild and churn, pricing stability, and technology risk can drive earnings volatility.			
Key mitigants	Contracted volumes, high fiber coverage and penetration, monopoly-like protections (including concessions or subsidies in uneconomic, low-density areas), ownership of alternate technology offerings, utility-like demand and regulation.			

Business risk profile (BRP) assessment

Excellent | Strong | Satisfactory | Fair | Weak | Vulnerable

- Utility-like model
- Low competition
- High fiber coverage
- Material contracted volume

→

- Highly unregulated
- Highly competitive
- Deep into the roll-out investment phase
- Lack of contracted volume

Corporate | Optics Bidco SpA (BB+/Negative/--)

Optics' business

Asset base	Considerable asset base with 114.4 million kilometers (km) of copper pairs and 14.8 million km of fiber passing through aerial and ducted cables that span Italy.
Market positioning	Leading player in the fixed market with 84% of the fixed broadband and ultra-broadband fixed market, and 76% market share including fixed wireless access technology.
Technology	Technology agnostic, by offering fiber-to-the-curb (FTTC), asymmetric digital subscriber line (ADSL), and fiber-to-the-home (FTTH).
Service areas	<u>Copper:</u> sole provider with nationwide coverage. <u>Fiber:</u> coverage is split into three areas : - Black area (dense urban); - Grey (mid-density/sub-urban) area and - White (rural) area. Potential overbuild with OpenFiber is expected to operate primarily in black areas. No official OpenFiber roll-out is planned for certain grey areas beyond the scope of the 'Italia 1 Giga' tender. Overlap with OpenFiber in certain grey and white areas should be limited as subsidies (relating to the 'Italia 1 Giga' plan) allocated to either Optics or OpenFiber are geographically distinct.

Key rating considerations

- Optic's strong position in the Italian fixed-line wholesale market coupled with high barriers to entry created by the substantial capital costs and the specific competitive landscape of Italy's wholesale broadband market.
- Good earnings visibility due to substantial regulated revenues and the long-term nature of the contracts.
- Risks around network volume associated with a potential competitive overbuild in areas where at least one network operator is present albeit with limited contribution to overall revenue.
- Execution and cost risks associated with the roll-out of the proposed FTTH network.
- Highly leveraged capital structure with limited deleveraging prospect, reflecting its significant capital expenditure and the proposed shareholder remuneration.

PF | Variations in project finance structures

Attributes can vary from typical project finance transactions and our ability to rate financing depends on the strength or weakness of the protections provided to lenders

Variations fully mitigated	Variations subject to potential notching or caps	PF methodology not applicable
– Limitations on the granting of the security package. – Covenant package *adequately constrains* the credit risks. – Parental linkage achieved. – Growing portfolio with highly restrictive covenants.	– *Partial security* due to granting limitations. – *Weaker covenant package* than we typically expect, with carveouts from general restrictions. – Cash flow waterfall weaknesses. – *Risk of cross default* to the project's parent may result in the rating being linked to the parent. – Growing portfolio with significant expansion capital expenditure and/or limited restrictions.	– *Material project assets not pledged* without limitations on the granting of security to third parties. – Security over key accounts and contracts. – Perceived *weakness of enforceability* prospects for lenders. – *Open portfolio with insufficient covenants* or eligibility criteria. – Parental delinkage achieved

PF | Project specifics may impact operational stability

Asset class operating stability (ACOS)

Limited operating risks linked to technology and maintenance.

Predictability of lifecycle requirements and simplicity of operations and maintenance.

Project-specific contractual terms and risk attributes

- Performance redundancy
- Operating leverage
- O&M management
- Technological performance
- Perform standards
- Other operational risk factors

Area of deployment and the market's maturity, and the share of active services in the operations.

- Regulatory risk
- Management and governance risk

We cannot exclude the possibility of more stringent regulation once the industry consolidates.

Resource and raw materials risk

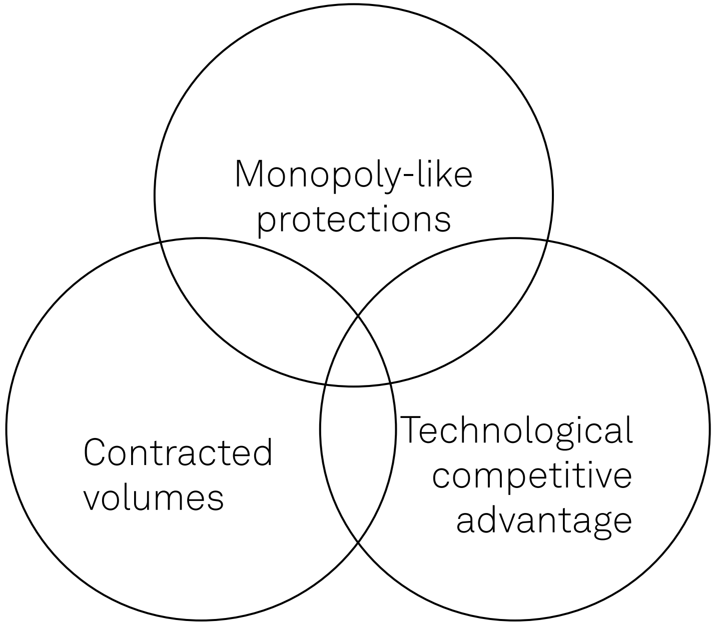
PF | Market risk exposure drives the business assessment

Regulation, concession frameworks, and contractual protection features make the difference

Key risks

- Pace of ramp-up
- Long-term penetration rate
- Revenue visibility
- Counterparty risk

Key mitigants



Operational risk starting point

Operational Phase Business Assessment 1 to 12

1
2
3
4
5
6
7
8
9
10
11
12

Mature asset, favorable regulatory environment, highly-contracted volumes, low competition, limited pricing risk, and limited risk of overbuild.

Moderate ramp up risk, exposure to pace of penetration, some competition.

Lack of a supportive regulatory framework or a monopoly-like market position.

Volumes, market share, and prices fully exposed to market dynamics.

PF | Features that influence rating outcomes

Off-taker dependencies

May represent a constraint depending on competition amongst retail players.

Mitigants could include:

- Competitiveness of the existing agreement;
- Willingness of other providers to take over in case one defaults;
- Timeliness and availability of liquidity for such replacement; and
- Our expectation of whether the internet provider can continue to service the contract, even during a bankruptcy proceeding.

Related Research

- Data Centers: Surging Demand Will Benefit And Test The U.S. Power Sector, Oct. 22, 2024
- Data Centers: Welcome Electricity Growth Will Fall Short Of U.S. Data Center Demand, Oct. 22, 2024
- Data Centers: Computing Risks And Opportunities For U.S. Real Estate, Oct. 22, 2024
- Data Centers: More Gas Will Be Needed To Feed U.S. Growth, Oct. 22, 2024
- Can Operators Navigate Pitfalls In Asia-Pacific's Data Center Boom?, Sept. 17, 2024
- ABS Frontiers: Digging Our Way To Fiber Securitizations, Sept. 9, 2024
- The Four Main Approaches For Rating Data Center Financings, June 13, 2024
- U.S. Tech's AI-wakening: Enterprises Tread Cautiously, Hyperscalers Charge Ahead, May 9, 2024
- Data Centers In South And Southeast Asia: Balancing Risk And Reward, Sept. 10, 2023

Related Criteria

- Rating Methodology And Assumptions For Global CMBS, July 26, 2024
- Data Center Securitizations: Global Methodology And Assumptions, June 13, 2024
- General: Sector-Specific Corporate Methodology, April 4, 2024
- General: Corporate Methodology, Jan. 7, 2024
- General: Project Finance Rating Methodology, Dec. 14, 2022
- General: Sector-Specific Project Finance Rating Methodology, Dec. 14, 2022

spglobal.com/ratings

S&P Global
Ratings