S&P Global
Ratings

Research

Presale:

Sabey Data Center Issuer LLC (Series 2023-1)

April 11, 2023

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Preliminary Rating

Class	Preliminary rating(i)	Preliminary amount (mil. $)	Maximum LTV (%)(ii)	Anticipated maturity (years)	Legal maturity (years)
A-2	A+ (sf)	175	70	5	25

Note: This presale report is based on information as of April 11, 2023. The rating shown is preliminary. Subsequent information may result in the assignment of a final rating that differs from the preliminary rating. Accordingly, the preliminary rating should not be construed as evidence of a final rating. This report does not constitute a recommendation to buy, hold, or sell securities. (i)The preliminary rating does not address post-ARD additional interest. (ii)The maximum allowable class A-2 LTV, per the transaction documentation. LTV--Loan-to-value ratio. ARD--Anticipated repayment date.

Profile

Expected closing date	April 21, 2023.
Collateral	Primarily first-mortgage liens on the asset entities' real property interests in the data centers; security interests in the data centers' tenant leases, reserves, and escrows; security interests in certain transaction accounts; and equity interest in each of the asset entities.
Issuer	Sabey Data Center Issuer LLC.
Manager	Sabey Data Center Properties LLC.
Servicer	Midland Loan Services.
Indenture trustee	Wilmington Trust N.A. (A-/Stable/A-2).
Sole structuring advisor and sole active bookrunning manager	Guggenheim Securities LLC.

Advance Notice Of Proposed Criteria Change: Data Center Securitizations

S&P Global Ratings announced on Jan. 18, 2023, that it is reviewing its approach for analyzing securitizations backed by data centers, and it aims to develop and publish specific criteria for this type of securitization. The ratings assigned by S&P Global Ratings to the notes could change as a result of that review, depending on the final criteria adopted and our assessment of the transaction. We cannot provide an estimated completion date for our criteria review at this time (see "Advance Notice Of Proposed Criteria Change: Data Center Securitizations," published Jan.

18, 2023, for more information).

Transaction Overview

Sabey Data Center Issuer LLC's series 2023-1 class A-2 data center revenue notes is a securitization of real estate and tenant lease payments for space and electrical capacity in Sabey Data Center Properties LLC's (Sabey; the manager) six hyperscale data center campuses located across three states: Washington (four), Virginia (one), and New York (one). The data centers consist of both turnkey and powered shell facilities. The manager plans to use the proceeds for general corporate purposes, including further development of the data centers.

The series 2023-1 shares collateral with series 2020-1, 2020-2, 2021-1, 2022-1, and 2022-2, all previous issuances out of the Sabey Data Center Issuer LLC master trust. Since the closing date of the series 2022-1 and 2022-2 issuances, roughly 19 megawatts (MWs) of leased turnkey capacity has been added to the master trust, which was driven by increases in the Ashburn, Va., Quincy, Wash., and Columbia, Wash. campuses. Leased capacity increased in the Quincy campus due to the addition of a new 22.5 MW building, which has been fully leased to an existing tenant and is scheduled to be completed in various phases. For purposes of our cash flow and liquidation analysis, we only gave credit to the first 7.5 MW phase that commenced in April 2023.

Although leased capacity increased across the portfolio, various appraisal capitalization rates expanded since the series 2022-1 and 2022-2 closing date. As such, the aggregate appraisal value has increased by $142 million to $2.1 billion from $2.0 billion. Including the $175 million of series 2023-1 class A-2 notes, the total debt outstanding at the series 2023-1 closing date is expected to be $1.35 billion

Outstanding ratings

Series	Class	Ratings	Balance at issuance (mil. $)	Current balance (mil. $)	Anticipated maturity	Legal final maturity
2020-1	A-1	A+ (sf)	50	0(ii)	April 2024(iii)	April 2045
2020-1	A-2	A+ (sf)	550	550	April 2025	April 2045
2020-2	A-2	A+ (sf)	200	200	October 2027	April 2045
2021-1	A-2	A+ (sf)	175	175	June 2026	June 2046
2022-1	A-2	A+ (sf)	175	175	June 2029	June 2047
2022-2	B	BBB (sf)	75	75	June 2029	June 2047

(i)Balance as of April 11, 2023. (ii)Future draws on the 2020-1 class A-1 require rating agency confirmation, among other considerations. (iii) Subject to a one-year extension.

The series 2023-1 class A-2 notes are pari passu to the series 2020-1 class A-1 and A-2 notes, 2020-2 class A-2 notes, 2021-1 class A-2 notes, and 2022-1 class A-2 notes (collectively, class A notes). The class A notes are senior to the series 2022-2 class B notes. The transaction features an approximate $17.3 million liquidity reserve at closing, and a cash trap trigger and an early amortization trigger at 1.30x and 1.20x three-month average amortization debt service coverage ratio (DSCR) levels, respectively. Likewise, if the three-month average amortization DSCR is less than 1.30x for any of the last 12 months, then a class B payment-in-kind (PIK) period will be in effect, in which the class B notes will defer interest. Non-payment of PIK interest or a non-payment of interest on PIK interest will not constitute an event of default unless it remains unpaid at legal final maturity.

Rationale

The preliminary ratings assigned to Sabey Data Center Issuer LLC's series 2023-1 class A-2 data center revenue notes reflect our view of:

- The lease portfolio's projected performance;
- The real estate value;
- The manager's and the servicer's experience;
- The servicer and indenture trustee-provided advances;
- The available cushion as measured by the estimated closing date DSCR of approximately 1.92; and
- The transaction's structure.

We rated the notes under our "Principles of Credit Ratings," published Feb. 16, 2011, with certain stress assumptions borrowed from our triple-net ABS criteria "Methodology And Assumptions For Rating North American Single-Tenant Real Estate Triple-Net Lease-Backed Securitizations," published March 31, 2016. Wholesale data center leases are not in the scope of our triple-net ABS criteria due to the properties' multitenant nature and the fact that wholesale data center leases are not all triple-net, among other factors. Nevertheless, we believe wholesale data center leases and single-tenant triple-net leases share several key credit risk factors, including the essential nature of the leased properties to the tenants' revenue-generating capabilities. As described below, we amended several of our typical triple-net lease assumptions to consider the limited historical performance of the wholesale data center sector and the manager, the multitenant nature of the data centers, and the possibility for average tenant credit quality to drift downward over the transaction's life.

Environmental, Social, And Governance (ESG)

Our rating analysis considered the potential exposure of the transaction to ESG credit factors. In our view, the exposure to ESG credit factors in this transaction is in line with other transactions in the sector. Data center securitizations typically consist of a pool of data center properties and related leases with tenants. Historically, our rated data center deals have involved relatively few unique data center properties. Data center securitizations are typically concentrated by number of obligors and properties; however, the properties are designed to be resilient to prolonged power outages.

Data centers are more exposed to environmental risks than other property types because physical climate risk could impact not only the building structure but also access to power. This risk is exacerbated in pools with relatively high concentration by geography and number of properties. Data centers have elevated exposure to waste and pollution due to the resources required to generate the necessary power to run the facilities. Similarly, data centers have substantial greenhouse gas emissions, particularly given the energy consumption needed to provide lighting and climate control, the latter of which is of particular importance for data centers and ensures the proper operation of the servers.

Social credit factors are neutral for this sector because data centers are not as labor intensive and also are typically not subject to health and safety risks. Social trends towards working from home, online shopping, and increased digitization of workstreams all stand to support the growth and

stability of data centers.

Governance credit factors for data center ABS are neutral given that collateral pools are typically static, the roles and responsibilities of each transaction party and the allocation of cashflows are well-defined, and transactions are structured to achieve isolation of the assets from the seller. However, governance weaknesses at the property manager levels could still have a negative rating effect.

Transaction Structure

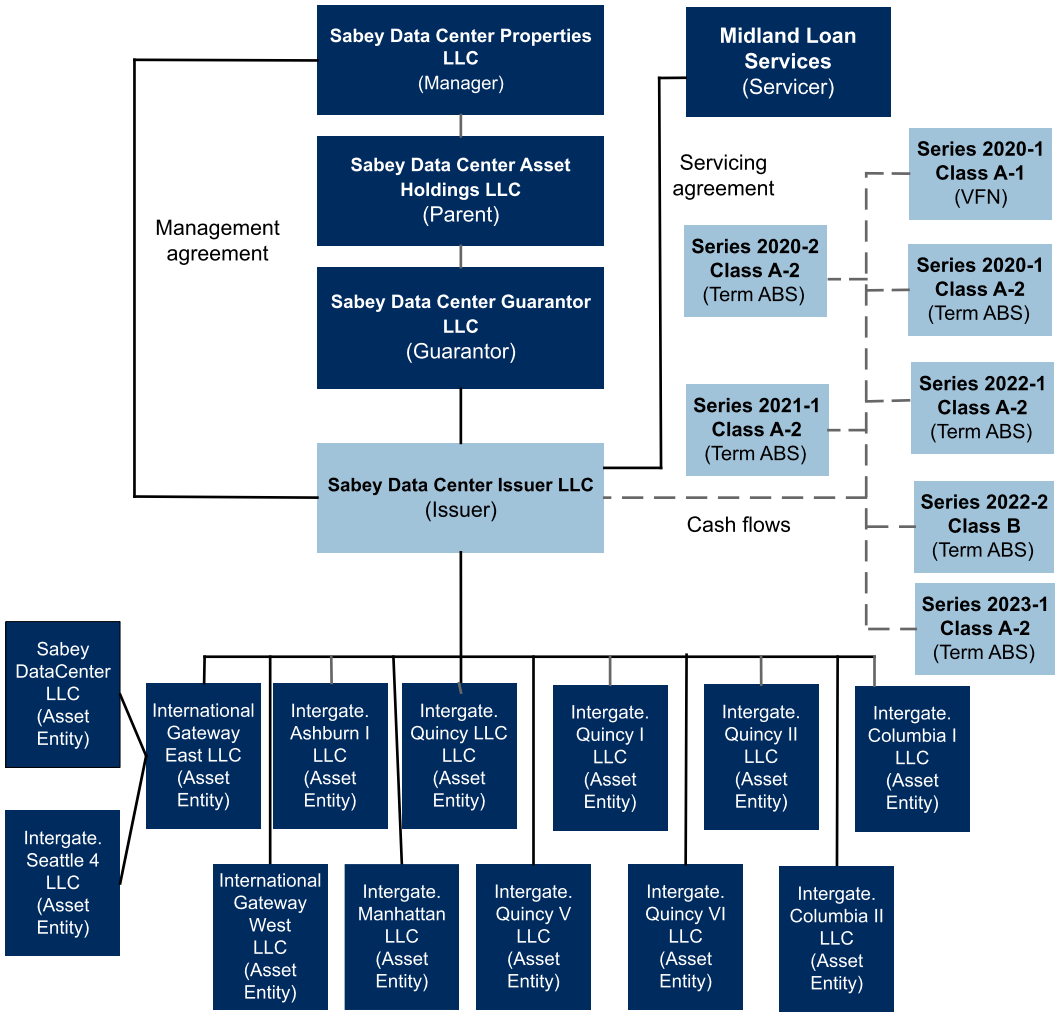
Chart 1 shows an overview of the transaction's structure.

The issuer is a bankruptcy-remote, Delaware limited-liability company formed solely to hold the equity interests in each of the asset entities and to issue notes. The issuer is a direct, wholly owned subsidiary of Sabey Data Center Guarantor LLC, the guarantor, and an indirect wholly owned subsidiary of Sabey Data Center Asset Holdings LLC, the parent. Each of the asset entities is a direct or indirect wholly-owned subsidiary of the issuer. The issuer has granted a security interest in all of the equity interest in each asset entity to the indenture trustee on behalf of the noteholders as collateral security for the notes.

Series 2023-1 class A-2 notes is issued in addition to the existing 2020-1, 2020-2, 2021-1, 2022-1, and 2022-2 notes. The issuer may issue additional series of notes (subject to the satisfaction of certain conditions, including DSCR and LTV ratio tests) that are secured by the entire collateral pool. Future series issuance will share collateral within the master trust.

Chart 1

Transaction Structure



ABS--Asset-backed securities. VFN--Variable funding note.

Strengths

The transaction's strengths include the following:

- The relatively long contract terms, with a weighted average remaining term of 6.3 years (weighted by total annualized adjusted base rent [AABR]);
- The relative high tenant diversity relative to peer transactions, with the top five tenants accounting for roughly 49.2% of AABR, the top 10 tenants accounting for roughly 67.3% of AABR, and only one tenant making up more than 12.0% of AABR;
- The staggered lease maturities, which range from 2023 to 2039, with no year making up more than 13.0% of AABR;
- The manager's long operating history in the real estate and data center industry;

- The tenants' high average credit quality: 78.0% (of AABR) are investment grade (rated 'BBB-' and above) or equivalent;
- The low customer churn rates, which is partially supported by the high cost of tenant relocation;
- The leases' importance to the tenants' core businesses: 74.2% of AABR is used for revenue generation purposes;
- The balanced supply and demand for wholesale data center space in the data centers' respective locations;
- The low cost of renewable power available at the data centers located in Central Washington (56.4% of AABR);
- The experienced servicer (Midland Loan Services);
- The class A loan-to-value ratio (LTV), which is constrained at 70.0% of the assets' appraised value;
- Draw conditions for the variable-funding notes, which require post-draw maintenance of a maximum 70.0% LTV ratio, a minimum 1.80x three-month average DSCR, and rating agency confirmation; and
- The transaction's structural features, including performance tests that trigger cash trapping or early amortization if the DSCR drops below certain minimum thresholds.

Weaknesses

The transaction's weaknesses include the following:

- The in-place lease rates have a weighted average lease rate of approximately $91 per kilowatt (kW) per month, which is lower than peer transactions;
- The limited geographic diversity, with sites in Washington (77.7% of AABR), Virginia (14.7% of AABR), and New York (7.6% of AABR);
- The limited industry diversity: Most tenants are in various subsectors of the technology industry;
- The limited historical sector performance data: approximately 13 years for the wholesale data center segment;
- The liquidity reserves, which are sized to the greater of approximately three months of note interest (excluding any PIK interest and accrued interest on PIK interest) and 12 months of priority expenses and maintenance capital expenditures, could prove insufficient if a disruptive event, such as a natural disaster, renders any of the data center campuses inoperable for an extended period;
- The lack of restrictions on the terms of future eligible leases, such as tenant credit quality, contract length, and optional termination features, which means the lease portfolio's overall credit risk profile could erode over time;
- The potential for decreased data center demand: Upon lease expiration, tenants with reduced needs could choose to migrate to the public cloud or other retail co-location data centers, while tenants with increased needs could opt to build, own, and operate their own data centers;
- The potential for higher than expected budgeted operating and maintenance capital

expenditures due to various macroeconomic factors, such as inflation, increased labor costs, power constraints, or supply chain shortages;

- The supply and demand conditions within the data centers' local markets could change adversely over time, driving down lease rates or driving up vacancy rates;
- The high current demand for data center operations personnel could make it expensive to replace current key members of the sponsor's leadership team, including the chief operating officer and the senior engineering team members;
- The potentially significant cost and delay of re-leasing powered shell facilities (16.8% of AABR); and
- The occurrence of a change of control from Sabey to certain key tenants' direct competitors could lead to the early termination of those leases (22.1% of AABR). This is similar to other data center transactions.

Mitigating factors

The following factors partly mitigate the transaction's weaknesses:

- The high costs for tenants to move to alternative data centers, including time, redundancy (to avoid service interruption), and logistical expenses (moving or duplication of network gear, racks, servers, and related fit-out);
- Despite the relatively high concentration in Central Washington (56.4% of AABR), the manager's cost of operations is lower in cheaper secondary markets;
- The lack of penalty-free optional termination provisions in the leases;
- The underlying tenants' initial credit quality;
- The requirement that the issuer maintain comprehensive liability, fire, earthquake, extended coverage, business interruption, and rental loss insurance policies, which we expect to be compliant with the minimum requirements of our insurance criteria for U.S. and Canadian CMBS transactions;
- The increased demand from the manager's larger tenants, some of which are themselves retail co-location and public cloud providers, could offset a decline in wholesale data center demand due to the manager's smaller tenants migrating to the public cloud or retail co-location;
- The manager's role as a provider of data center space to retail co-location and public cloud tenants, which may allow it to benefit from increased demand even as smaller tenants choose to migrate to co-location or public cloud data center providers;
- Interest, priority operating expenses, and maintenance capital expense advancing by the servicer, with a backup obligation by the indenture trustee, Wilmington Trust N.A.;
- The stress scenarios we performed in our cash flow analysis, which considered the pool's industry concentration, the limited industrial history, and the potential for downward migration in average tenant credit quality;
- The available cushion under our stress sensitivities, which considered elevated lifetime budgeted operating expenses and maintenance capital expenditures (see sensitivity runs 1 through 3);
- The manager's long operating history and seasoning in the existing leases;

- The timely interest and ultimate principal payments paid on the notes by the legal final maturity under our stress scenarios;
- The strong renewal history in Sabey's powered shell tenant leases and our stress assumptions incorporated longer time lag in re-leasing powered shell facilities; and
- The change of control could lead to an event of default and rapid amortization of the notes. In addition, the probability of an acquisition by the key tenants' direct competitors is relatively low, in our view, due to the potential erosion on the data centers' property value if the specified tenant leases were to terminate prior to their contractual expiration.

Industry Characteristics: Data Center Sector

Data centers are real estate facilities that house computer servers and network equipment within a highly secure environment with redundant mechanical, cooling, electrical power systems, and network connections. Sabey, the wholesale data center operator and manager of this transaction, is responsible for maintaining the facility's infrastructure, providing physical security, and re-leasing the sites' capacity as it becomes vacant. Wholesale tenants are entirely responsible for the maintenance and management of their racks, storage, and networking equipment.

The vast majority of Sabey's data centers are leased by large wholesale tenants, which typically require 500 kWs (roughly 70% of AABR) or more of capacity. Wholesale data centers place the entire responsibility for managing the tenant's network and equipment on the tenant, whereas retail co-location facilities, which tend to support tenants with shorter-term and smaller capacity needs, may offer varying levels of hands-on support and other services. In either model (wholesale or retail data center), the proper provision of uninterruptable power and cooling is critical to avoid any disruption in the tenant's business operations, especially those whose services necessitate consistent connection to their network through these data centers.

In a turnkey tenant lease, the manager owns the critical mechanical and electrical infrastructure, and provides space, physical security, power, and cooling, as well as ongoing maintenance of the power and cooling systems. The tenants are fully responsible for all other aspects of their computing infrastructure. Most of the turnkey tenant leases are modified gross leases (about 83.2% of AABR), for which the tenants don't explicitly reimburse operating expenses (other than electricity), taxes, and insurance expenses, although those expenses are typically accounted for in their base rent rate. In a powered shell tenant lease, which are typically structured as triple-net leases (about 16.8% of AABR), the manager provides the space with power and connectivity with no additional offering with respect to backup power and cooling, while the tenant reimburses the site manager for costs, including taxes, insurance, operating expenses, and electricity responsible.

We believe the exponential increase in data usage, broad migration to the cloud, and transition to a fully digitized economy will continue to shape demand for third-party-operated data centers. Overall supply and demand is relatively balanced as new data center development has been constrained in certain markets by site availability, lingering supply chain issues, and, more recently, power capacity constraints.

Although we expect data centers to see some growth deceleration in a recessionary environment, we believe it will be mitigated by the critical nature of data centers. Against the high inflation backdrop, elevated raw material costs along with the rising cost of capital and possible material shortages could slow the pace of expansion and medium-term revenue growth rates of data center operators.

We also believe the long-term industry risks include shifting technology, cloud service providers in-sourcing their data center needs, tenant concentration, and weaker pricing trends in hyperscale segments. Nonetheless, market data suggest that 2022 vacancy rates were low for key data center markets and rental rates increased year over year.

Market Summary

Northern Virginia is home to the largest data center market in the world in terms of operational square feet and MWs, and approximately 70.0% of the world's internet traffic runs through this area. This region has the highest density of dark fiber in the world, providing low latency to the internet backbone. As of 2022, 451 Research estimates that Northern Virginia has over 12 million sq. ft. and more than 2,000 MWs of data center space and capacity, respectively. The market continues to grow due to its relatively low power rates, affordable land, data center-specific tax incentives, general safety from natural disasters, and proximity to a primary internet exchange connectivity point on the East Coast.

More than half of data center development in the U.S. is concentrated in Northern Virginia. In July 2022, Dominion Energy informed developers that it wouldn't be able to provide expected power to some new data center developments and that the delayed delivery of power may last until 2026. The power delays are expected to increase rents and benefit operators with customer leases expiring over the next two years.

Due to its proximity to Wall Street and undersea cables, the New York metropolitan area (including Northern New Jersey, Southeastern New York, and Southwestern Connecticut) includes more than 6.0 million sq. ft. and 860 MWs of data center space and capacity, respectively, and accounts for the highest co-location revenues across data center markets. As such, pricing tends to be higher in the New York metropolitan area, with larger wholesale deployments ranging from $275 to $600 per kWs per month and smaller retail deployments ranging from $300 to $700 per kWs per month. Throughout the New York metropolitan area, there are roughly 147 data centers operated by roughly 56 providers, as per 451 Research.

451 Research estimates Seattle to be the 10th largest data center market and home to roughly 1.8 million sq. ft. data center space, operating more than 180 MWs of data center capacity. Seattle benefits from dense interconnectivity options, as well as cheaper power compared to other primary data center markets. Regarding pricing, larger wholesale rates range from $125 to $150 per kW per month, while smaller capacity deployments typically start at $150 per kW per month, and can reach up to $250 per kW per month.

Quincy and Columbia (collectively, Central Washington) are considered to be secondary data center markets. According to 451 Research, Central Washington has an estimated 1.9 million sq. ft. of data center space. Additionally, Central Washington benefits from low-cost hydro-power plants and one of the fastest fiber optic networks in the nation, as per the Washington Post. Due to Central Washington's lower power costs and lower costs of operations, larger wholesale deployments find Central Washington to be very attractive, resulting in typical lease rates between $90 to $120 per kW per month.

Business Description: Sabey

Sabey is a privately owned, multitenant data center provider founded in 1997. It is a division of Sabey Corp., which has over 40 years of history in commercial real estate development and construction. Sabey owns and operates seven data center campuses, which, except for one, are all

included in the securitization portfolio. The securitization's data centers comprise 100.8 MWs of built turnkey capacity available, 787,141 sq. ft. of powered shell space, and 477,793 sq. ft. of other leasable space. Core to Sabey's value proposition is its focus on low-cost markets that utilize renewable power. Sabey looks to provide competitive pricing to its customers through these markets, because these secondary markets tend to have lower costs to operations than other primary markets. Each member of Sabey's senior management team has over 20 years of experience, and the company has a staff of roughly 90 employees, with teams dedicated to operations, sales, accounting, etc. Sabey's customer base includes tenants across a range of sectors such as technology, health care, media, and financial institutions, among others.

Pool And Structural Characteristics

The series 2023-1 issuance is a securitization of lease revenue, secured by fee simple ownership interests in six operating wholesale data center campuses. The data centers are located in Ashburn; Quincy; East Seattle, Wash.; West Seattle, Wash.; Columbia; and New York, N.Y. The operational data centers provide 787,141 gross sq. ft., with approximately 100.8 MWs of built power available to tenants to operate their servers and computing equipment.

Table 1 provides a comparison table on the pool of data centers and their respective leases.

Table 1

Pool Characteristics

	Sabey 2023-1	Sabey 2022-1/2022-2	Vantage 2023-1	Stack 2023-1	Aligned 2022-1	Compass 2022-1
Appraised value of data centers (mil. $)	2,144	2,002	3,718	2,621	2,626	1,131
No. of data center campuses	6	6	13	8	5	13
No. of tenants	109	92	18 (not including enterprise tenants)	26	32	5
S&P Global Ratings' value (mil. $)(i)	936	833	1,883	1,327	1,279	452
S&P Global Ratings' weighted average capitalization rate (%)(iii)	8.72	8.75	8.83	8.70	8.69	9.06
CLP leased (kW)	94,774	76,082	174,422	138,305	161,466	43,525
Capacity ramped (kw)	79,498	69,430	163,071	118,680	130,308	34,911
Total potential CLP (kw)	94,774	81,849	176,100	143,980	162,000	43,525
AABR (mil. $)	137.38	120.90	272.89	187.60	173.97	55.14
Turnkey (%) (iii)	83.20	79.60	100.00	93.80	100.00	100.00
Powered shell (%) (iii)	16.80	20.40	--	6.20	--	--
% leases triple-net(iii)	16.80	20.40	--	45.00	0.00	32.80

Table 1

Pool Characteristics (cont.)

	Sabey 2023-1	Sabey 2022-1/2022-2	Vantage 2023-1	Stack 2023-1	Aligned 2022-1	Compass 2022-1
% leases modified gross(iii)	83.20	79.60	100.0 (iii)	55.00	100.00	67.20
Weighted average original lease term (years) (weighted by AABR)	11.8	12.1	11.8	10.9	7.0	10.0
Weighted average remaining lease (years; weighted by AABR)	6.3	6.3	7.7	6.6	5.0	5.6
Range of original lease (mos.)	7-420	36-294	36-240	36-183	36-144	53-182
Range of remaining lease (mos.)	1-199	2-143	2-163	12-145	1-120	3-168
Closing date DSCR	1.92	2.07	2.47	2.44	2.47	2.22
% of investment-grade tenants (iii)	78.0	69.3	89.2	71.0	62.2	67.2
Largest five tenants (% of AABR)	49.2	49.6	83.3	74.8	74.3	100.0
Largest five tenants (%)(iii)	Tenant 1 (19.9), tenant 2 (11.2), tenant 3 (7.9), tenant 4 (5.3), and tenant 5 (4.9)	Tenant 1 (15.9), tenant 2 (12.7), tenant 3 (9.0), tenant 4 (6.0), and tenant 5 (6.0)	Tenant 1 (57.3), tenant 2 (12.4), tenant 3 (4.8), tenant 4 (4.7), and tenant 5 (4.0)	Tenant 1 (35.4), tenant 2 (20.0), tenant 3 (8.2), tenant 4 (6.2), tenant 5 (5.0)	Tenant 1 (26.4), tenant 2 (19.3), tenant 3 (11.3), tenant 4 (10.5), and tenant 5 (6.9)	Tenant 1 (54.2), tenant 2 (22.1), tenant 3 (6.7), tenant 4 (4.0), and tenant 5 (12.9)
Largest three business sectors (%)(iii)	Technology (73.5), telecom (6.3), and health care (5.3)	Technology (71.0), health care (7.6), and telecom (7.3)	Cloud (60.6), tech hardware (16.4), and software (6.3)	Big data (46.4), Media (20.0), Telecommunications (12.7)	Cloud (40.7), tech (34.8), and financial services (12.7)	Hyperscaler (67.2), colocation datacenter (28.8), enterprises (4.0)
State concentrations (%)(iii)	Wash. (77.7), Va. (14.7), and N.Y. (7.6)	Wash. (80.8), Va. (11.0), and N.Y. (8.2)	Calif. (71.5), Wash. (11.8), and Quebec (16.7)	Calif. (28.2), Ill. (20.1), Texas (18.1), Ore. (17.9), Va. (9.8), Ga. (5.2), Ohio (0.8)	Ariz. (43.3), Utah (25.1), Va. (24.2), and Texas (7.5)	Quebec (54.2), Ontario (12.9), Texas (8.0), Tenn. (7.3), N.C. (7.2), Minn. (6.7), and Okla. (3.6)

(i)Represents the liquidation value estimated in accordance with "CMBS Global Property Evaluation Methodology," published Sept. 5, 2012. (ii)The "as-is" value considers only spaces currently built and leases where the tenants have taken occupancy and are paying. The "construction complete" value assumes that all spaces are fully built out and the tenants subject to forward-start leases have taken occupancy are paying according to the executed leases. (iii)By annualized adjusted base rent. Sabey- Sabey Data Center Issuer LLC. Compass--Compass Datacenters Issuer LLC. Aligned--Aligned Data Centers Issuer LLC. Stack--Stack Infrstrastructure Issuer LLC. Vantage--Vantage Data Centers Issuer LLC. CLP--Critical load power. DSCR--Debt service coverage ratio. AABR--Annualized adjusted base rent. kW--Kilowatt.

Charts 2-6 provide additional details about the underlying portfolio.

Chart 2

Portfolio Distribution By Tenant

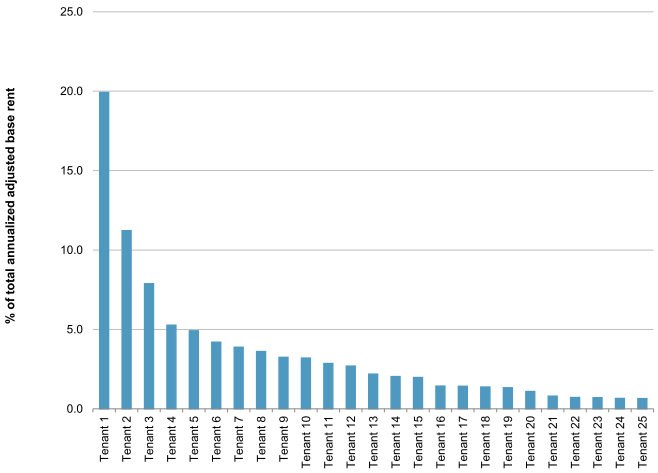


Chart 3

Tenant Credit Rating

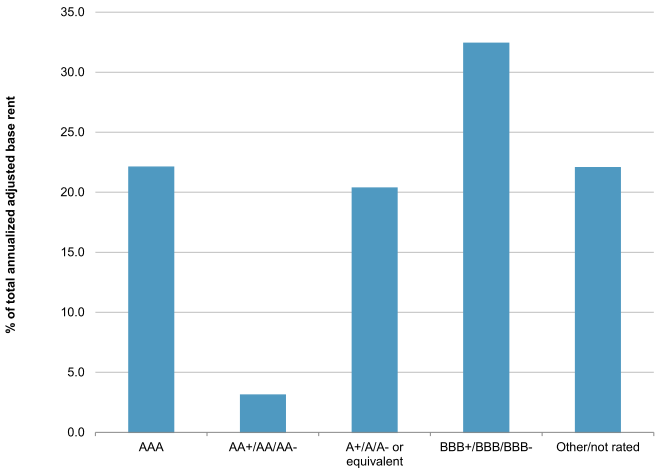


Chart 4

Portfolio Distribution By Industry

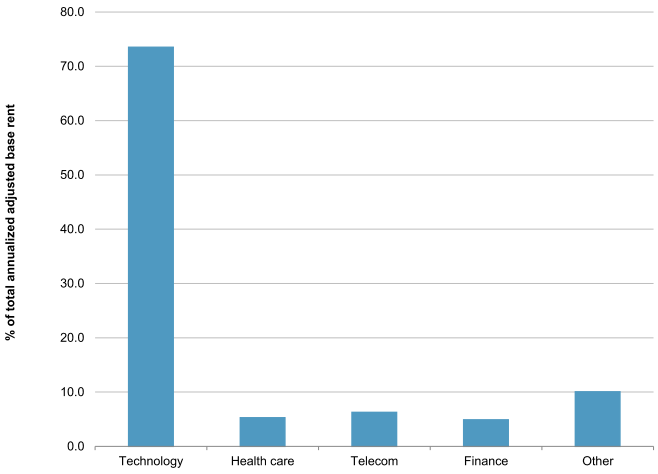


Chart 5

Portfolio Distribution By Remaining Term (Years)

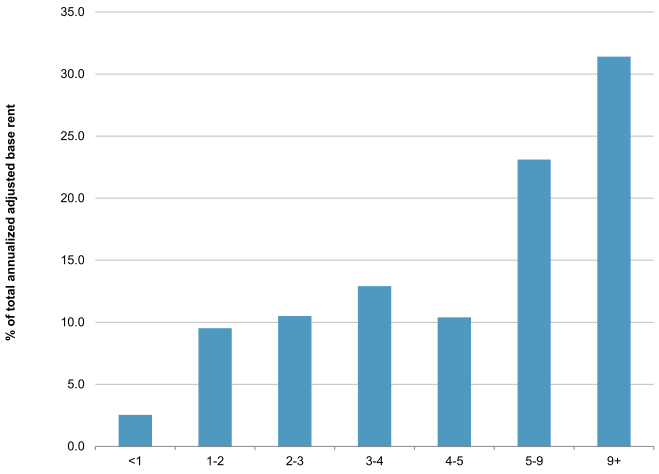


Chart 6a

Portfolio Distribution By Monthly Rent ($/kW) (Turnkey)

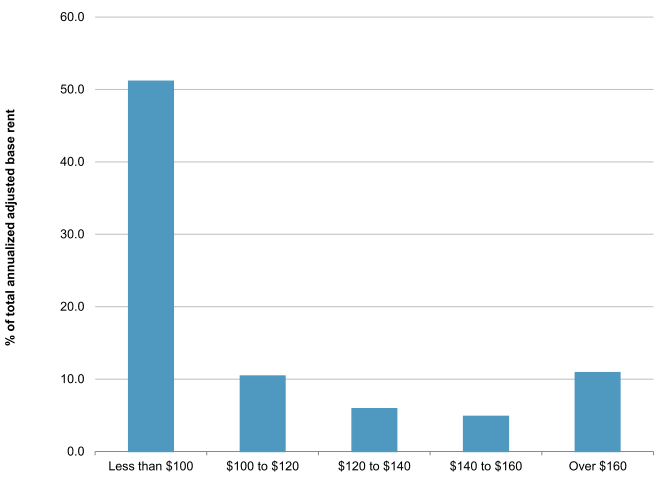
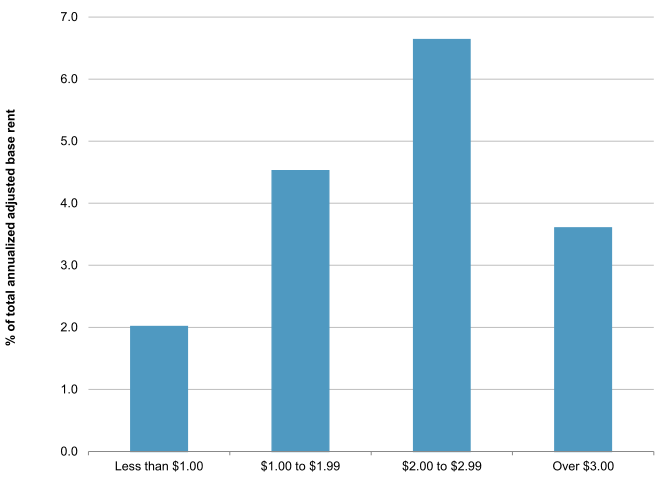


Chart 6b

Portfolio Distribution By Monthly Rent ($/sq. ft.) (Powered Shell)



Manager Operating Duties

The manager will have certain operating duties specified in the management agreement. These duties include:

- Marketing the data center space to new tenants;
- Negotiating and executing new tenant leases and renewals;
- Administering tenant leases, including invoicing rent and other receipts, and managing delinquencies and defaults;
- Maintaining insurance, including property, casualty, and business interruption;
- Paying real and personal property taxes;
- Keeping the data centers in compliance with applicable laws and regulations;
- Providing for necessary maintenance and arranging for utilities (including electricity), services, equipment, and supplies;
- Providing physical security to the data centers, including guards, fingerprint monitors, fencing, and other mechanisms that provide for the physical safety of tenants' infrastructure; and
- Managing capital improvements and other construction in connection with the leasing of site space.

The issuer will pay the manager a monthly management fee equal to 3.0% of the aggregate base rent (not including the operating and maintenance capital expenses) as compensation for those duties.

Manager Performance Obligation

For the turnkey arrangements in the portfolio, the tenant leases include service-level agreements (SLAs) that require the manager to provide uninterrupted levels of electricity, access, and cooling to the tenant. In support of that requirement, the manager maintains, as part of the data center infrastructure, backup batteries and generators that provide uninterrupted power in the event of temporary electric utility outages. Most SLAs provide remedies for the prolonged or repeated interruption of critical services.

These remedies are generally limited to the reimbursement of a portion of already paid rent in proportion to the duration of the outage (although, in practice, no cash flows would be paid back to the tenant and would merely be netted against future rent obligations). Based on our assessment of the manager's operational procedures, the experienced management team, and the negligible number of SLA breaches during its operating experience, we believe SLA breaches represent a minimal risk to the cash flows.

Transaction Expenses

Transaction expenses, other than the management fee, fall into the three categories summarized in the table 2.

Table 2

Transaction Expenses

Expense category	Payment priority	Expenses covered(i)	Monthly budgeted expense amount(ii)
Priority expenses	First payment in the application of funds	Taxes, insurance premiums, electricity (subsequently charged to the tenants), and, if applicable for future series, rents payable relating to any data center including any ground rents(iii).	$8.12-$21.85 per kW, subject to an annual 2.0% escalator.
Operating expenses	Sixth payment in the application of funds (following the payment of note interest)	Site labor operations, repairs and preventative maintenance, utilities (excluding electricity), and security.	$15.33-$50.20 per kW for each data center, subject to an annual 2.0% escalator.
Maintenance capital expenses	Sixth payment in the application of funds (following the payment of note interest)	Maintenance and replacement of batteries; capacitors (uninterruptable power supply), electrical switches, and generators; chiller plants; cooling towers, motors, and compressors; and other infrastructure components.	$4.42 per kW subject to an annual 2.0% escalator.

(i)For turnkey data centers.(ii)Applied against aggregate critical load power of the completed data centers. (iii)The issuer has fee simple ownership over all real estate. However, additional collateral in which the issuer does not have fee simple ownership may be contributed in conjunction with future note issuances. kW--Kilowatt.

Based on the manager's expense estimates, the expense estimates provided by the independent real estate appraiser in conjunction with the data center appraisals, and the comparable values we have seen in CMBS transactions, we believe the expenses budgeted for in the payment priority are adequate. Furthermore, in the Sensitivity Analysis section below, we assessed the breakeven increase in operating and maintenance capital expenses (beyond the 2.0% annual escalation currently budgeted for in the transaction documentation) that the transaction can withstand while still paying timely interest and ultimate principal.

Payment Priority

Each month, the available funds will be used to pay expenses, interest, and principal in the priority shown in table 3.

Table 3

Waterfall

Priority	Payment
1	Priority expense reserve.
2	The prior payment dates' unpaid indenture trustee, servicing, and other servicing fees; then, unreimbursed advances and interest; and then any remaining unpaid indenture trustee, servicing, and other servicing fees.
3	Additional issuer expenses to the indenture trustee, servicer, and/or other applicable persons so as not to exceed the annual additional issuer expense limit; and then the VFN agent fee.
4	Accrued note interest for all class A notes and accrued and unpaid commitment fees and all other fees, expenses, and other amounts due to the VFNs (including LOC fees).
5	If a PIK period is not in effect and no event of default has occurred and is continuing, accrued note interest for all notes other than class A.
6	Monthly expense amounts to the obligors that are in excess of the amounts drawn from the liquidity reserve for operating and maintenance capital expenditures or the liquidity LOCs.
7	Accrued and unpaid management fees to the manager.
8	Operating expenses and maintenance capital expenditures for current calendar month in excess of the amounts drawn from the liquidity reserve subaccount or the liquidity LOCs, not including servicer-approved monthly expense amounts.
9	Required liquidity reserve amount.
10	If an amortization period is not in effect and no event of default has occurred and is continuing, an amount equal to any class A LTV test sweep amount as of the application date.
11	If an amortization period is not in effect, a cash trap condition is not in effect, and no event of default has occurred and is continuing, an amount equal to the class A monthly amortization amount for any series' class A notes.
12	If an amortization period is not in effect and no event of default has occurred and is continuing, the additional principal payment amount and any applicable prepayment consideration.
13	If after the ARD for any series of outstanding VFN or term notes, an amortization period or a PIK period is not in effect, and no event of default has occurred and is continuing, the aggregate unpaid principal balance of the outstanding VFNs or term notes.
14	If a cash trap condition is continuing and no event of default has occurred and is continuing, the remaining amount of available funds to the cash trap reserve subaccount.
15	During an amortization period or the continuation of an event of default, the principal balance of all outstanding class A notes.
16	During a PIK period or a continuation of an event of default, accrued and unpaid note interest for all outstanding notes other than class A notes.
17	During an amortization period or during the continuation of an event of default, the aggregate principal balance of all outstanding notes other than class A notes.
18	Contingent interest, deferred contingent interest, post-ARD additional interest and deferred post-ARD additional interest due.
19	Additional issuer expenses not paid in item 3 due to the annual additional issuer expense limit plus accrued interest to the indenture trustee, servicer, and/or other applicable persons.
20	Operating expenses and maintenance capital expenditures of the asset entities not paid in items 6 and 8.

Table 3

Waterfall (cont.)

Priority	Payment
21	Executed forward starting lease reserve amount and/or qualified new lease reserve amount at the manager's direction.
22	Optional payments on the principal to the class A-1 noteholders at the issuer's direction.
223	Manager-determined amounts to the capital expenditures reserve subaccount.
24	Unreimbursed advances, including advance interest, to the manager.
25	The remaining available funds to the issuer.

ARD--Anticipated repayment date. VFN--Variable funding note. LTV--Loan-to-value. LOC--Letter of credit. PIK--Payment-in-kind.

A cash trap condition will occur if the three-month average amortization DSCR is less than 1.30x (the cash trap amortization DSCR), and it will continue until it is above 1.30x for two consecutive months. During a cash trap condition, excess cash flow otherwise payable to the issuer will be diverted to the cash trap reserve subaccount.

A PIK period will be in effect when any class A notes are outstanding and the three-month average amortization DSCR is below 1.30x for any of the past 12 consecutive months. During PIK periods, the class B interest, which would otherwise be paid in step 5 of the waterfall above, will be paid in step 16 after the class A principal payment.

An amortization period will occur if the three-month average amortization DSCR is less than 1.20x (the minimum amortization DSCR), and it will continue until it is above 1.20x for two consecutive months. During an amortization period, or after and during an event of default, all excess cash flow will be applied to the notes' aggregate unpaid principal amount sequentially across classes and pro rata among outstanding notes of the same class.

The amortization DSCR is calculated as the ratio of the annualized adjusted net operating income to mandatory debt service, where mandatory debt service consists of interest on the class A notes to be paid over the succeeding 12 payment dates plus 30-year mortgage-style principal that would be paid over the succeeding 12 periods if the class A note principal payments were determined assuming a 30-year remaining term and an interest rate equivalent to the blended average rate of all outstanding class A notes.

The servicer must make interest advances on the notes if the funds are deemed recoverable. The advances are meant to cover any shortfalls resulting from timing mismatches because of missed lease payments and any interest shortfalls. This requirement excludes make-whole amounts, post-ARD additional interest, and deferred post-ARD additional interest. If the servicer fails to make an advance, the indenture trustee must make the advance in its place. These requirements for advances serve as a form of liquidity for the notes.

S&P Global Ratings' Stress Scenario Assumptions

To determine the appropriate preliminary rating for the series 2023-1 notes, we analyzed the transaction's cash flows utilizing stress assumptions derived in part from our criteria for rating single-tenant real estate triple-net lease-backed securitizations. We ran various cash flow scenarios to test the transaction's sensitivity to changes in default timing, given the transaction's credit enhancement (see "Methodology And Assumptions For Rating North American Single-Tenant Real Estate Triple-Net Lease-Backed Securitizations," published March 31, 2017).

We believe the risk to the cash flow generated from the portfolio of data centers and their associated leases stems from several major factors. These include:

- Defaults of the initial pool of tenants (the lessees);
- The property manager's ability to re-lease the properties vacated by defaulted lessees to new tenants and the renewal rate of tenants that reach the end of their leases;
- The lease terms for new tenants (rental rate and lease term);
- The credit profile of new tenants; and
- The liquidation value of the data centers toward the legal final maturity of the transaction.

We made certain modifications to our triple-net lease criteria to address the differences between triple-net leases and wholesale data center leases, as well as the data centers' relative lack of performance history. The primary modifications include the following:

- We did not assume any lease acceptance in the bankruptcy proceedings for defaulted tenants, given the lack of historical observations of defaulted wholesale data center tenants.
- We did not assume property liquidations before the 12-month window before the transaction's legal final maturity for a portion of the defaulted lease pool as we typically would for triple-net leases because the data centers are multitenant. We believe it would likely be more economical for the manager to continue operating the centers rather than liquidate them, even during periods of high vacancy rates.
- For tenants not rated by S&P Global Ratings, we assumed a 'CCC-' rating rather than the typical 'B' rating specified in the triple-net lease criteria. This assumption reflects the lack of performance data for the wholesale data sector.
- Given the lack of eligibility requirements for future tenants' credit quality, we assumed that by the start of our second default wave the tenant pool will have migrated from its current average credit quality of 'BB+' down to an average credit quality of 'CCC-'.
- Given the limited history of wholesale data lease rates and the uncertainty around future supply and demand conditions, we applied re-lease haircuts for both performing and defaulted leases that are consistent with those that are one full rating category above the haircut rates specified in the triple-net lease criteria. For example, at the 'A' category, we would assume a 20.0% loss in rental income upon lease renewal for a performing lease rather than the 15.0% specified in the criteria. Similarly, at the 'A' category we would assume a 35.0% haircut to re-lease rental rates post-default for defaulted leases rather than the 30.0% specified in the criteria.

We used the following to determine the initial pool of lessees' initial default rate:

- S&P Global Ratings' CDO Evaluator in conjunction with our ratings on the lessees (or 'CCC-' for unrated lessees);
- The allocated collateral value per lease (where we took the present value of each lease's scheduled payments as a percentage of the total scheduled lease payments, and used that percentage to allocate a portion of the total collateral value to the lease); and
- The current remaining terms of the leases.

We determined the portfolio's property liquidation value using our commercial real estate methodology. We assumed rental income based on the in-place leases, the appraiser's estimate of market rent, and recent leasing data from the market, and then applied a vacancy deduction to

the potential gross income. We estimated expenses and expense reimbursements based on information from the appraisal reports and comparable properties. These expenses included fixed items, such as real estate tax and insurance, estimated management fees, and variable expenses, which were reimbursed in our income projections. We determined net cash flow after deducting estimated leasing commissions, tenant improvement expenses, and capital reserves and expenditures, based on projected lease roll assumptions. We selected direct capitalization rates based on factors, such as appraisal and market capitalization rates, property performance and tenant strengths, and property type.

Table 4 shows a summary of stress assumptions.

Table 4

Cash Flow Assumptions

Stress level	A+	BBB
Portfolio scenario default rate (default wave 1) (%)	33.58	26.51
Portfolio scenario default rate (default wave 2) (%)	92.07	86.35
Non-defaulting leases		
Lease rate credit upon renewal (%)	78.3	85.0
Defaulting leases		
Accepted in bankruptcy (%)	0	0
Rejected in bankruptcy and re-leased (%)	100	100
Re-lease lag (months)	12	12
Lease rate credit (%)	63.3	70.0
Liquidation proceeds ($)	936,335,215	936,335,215

The $50 million series 2020-1 class A-1 variable funding notes were assumed to be undrawn at closing because rating agency confirmation is required prior to drawing, among other requirements.

Cash Flow Analysis

We analyzed various simulated cash flow scenarios to determine whether the available credit support is sufficient to withstand the assumed losses. In each scenario, we applied the cumulative effects of the assumptions outlined in table 4 with four default timing curves, where the first default wave starts in year one, the second default wave starts in year 16, and final liquidation starts one year before the notes' earliest legal final maturity date (see table 5).

In each rating scenario, the cash flow results showed that ultimate interest and principal on all classes of notes--both new and existing--would be fully paid by legal final maturity at their respective stress levels (all class A notes passed the 'A+' and 'BBB' assumptions, while all class B notes only passed the 'BBB' assumptions). There were no deferred expenses (priority, operating, or maintenance capital expenses) in any of the scenarios. Although the transaction documents require the servicer or indenture trustee to make advances on interest payments (if deemed recoverable), no advances were assumed in the cash flow modeling scenarios.

Table 5

Default Curves

Year	Curve 1 (%)	Curve 2 (%)	Curve 3 (%)	Curve 4 (%)
1	40.0	10.0	10.0	15.0
2	10.0	10.0	10.0	15.0
3	10.0	10.0	10.0	15.0
4	10.0	40.0	10.0	15.0
5	10.0	10.0	10.0	15.0
6	10.0	10.0	10.0	15.0
7	10.0	10.0	40.0	10.0

Sensitivity Analysis

Using a base-case scenario in which we assumed contractual cash flows with no losses and one renewal following the initial lease term as the benchmark, we ran several break-even cash flow runs to measure the transaction's ability to withstand decreases in revenue or increases in expenses.

Sensitivity run 1: gross revenue reduction stress

We found that the class A and B notes could withstand a 35.0% and 31.0%, respectively, reduction in monthly gross revenue and still pay interest when due and full principal by the rated final maturity.

Sensitivity run 2: maintenance capital expense stress

We found that the class A and B notes could withstand a 10.0x and 9.0x, respectively, increase in monthly budgeted maintenance capital expenses and still pay interest when due and full principal by the rated final maturity.

Sensitivity run 3: priority expense, operating expense, and maintenance capital expense stress

We found that the class A and B notes could withstand a 9.75% and 9.50%, respectively annual escalation of priority expenses, operating expenses, and maintenance capital expenses (instead of the 2.00% assumed in the rating scenario) and still pay interest when due and full principal by the rated final maturity.

Events of Default

Under the transaction documents, each of the following constitutes an event of default:

- A failure to pay interest on the notes when due (provided that failure to pay interest or PIK interest on the class B notes in accordance with sequences 5 or 16 of table 3 does not constitute an event of default);

- A failure to pay principal on any notes by the legal final maturity;
- A failure to pay any other payments due under the transaction documents, to the extent that on the payment date there are funds available in the transaction accounts;
- A failure to comply with financial reporting requirements;
- A failure to comply with the covenants contained in the indenture or transaction documents;
- A material breach of the representations or warranties;
- The issuer being subject to involuntary bankruptcy proceedings;
- The issuer initiating voluntary bankruptcy proceedings;
- A change of control resulting in a specified tenant's lease termination; and
- The guarantor ceasing to own 100% of the issuer, or the issuer ceasing to own 100% of any asset entity.

Surveillance

We will maintain active surveillance on the rated notes until the notes mature or are retired. The purpose of surveillance is to assess whether the notes are performing within the initial parameters and assumptions applied to each rating category. The transaction terms require the issuer to supply periodic reports and notices to S&P Global Ratings for maintaining continuous surveillance on the rated notes.

Related Criteria

- Criteria | Structured Finance | ABS: Advance Notice Of Proposed Criteria Change: Data Center Securitizations , Jan. 18, 2023
- General Criteria: Environmental, Social, And Governance Principles In Credit Ratings , Oct. 10, 2021
- Criteria | Structured Finance | General: Global Framework For Payment Structure And Cash Flow Analysis Of Structured Finance Securities , Dec. 22, 2020
- Criteria | Structured Finance | Legal: U.S. Structured Finance Asset Isolation And Special-Purpose Entity Criteria , May 15, 2019
- Criteria | Structured Finance | General: Counterparty Risk Framework: Methodology And Assumptions , March 8, 2019
- Criteria | Structured Finance | ABS: Methodology And Assumptions For Rating North American Single-Tenant Real Estate Triple-Net Lease-Backed Securitizations , March 31, 2016
- Criteria | Structured Finance | General: Global Framework For Assessing Operational Risk In Structured Finance Transactions , Oct. 9, 2014
- General Criteria: Global Investment Criteria For Temporary Investments In Transaction Accounts , May 31, 2012
- General Criteria: Principles Of Credit Ratings , Feb. 16, 2011

Related Research

- Economic Outlook U.S. Q2 2023: Still Resilient, Downside Risks Rise, March 27, 2023
- Credit FAQ: How U.S. Data Centers Are Navigating Inflation And Recession Risks, July 21, 2022
- ESG Credit Indicator Report Card: Real Estate, Dec. 14, 2021
- Field Of Data Streams: If You Build It, They Will Come, Sept. 20, 2019
- Cloud Disruption: Cloud Adoption And Digital Transformation Are Positives For The Data Center Industry, Sept. 7, 2018
- Despite Continued Growth, U.S. Data Centers May Face Long-Term Risks From Financial Pressures And Uncertain Tech Developments, Oct. 30, 2017
- Global Structured Finance Scenario And Sensitivity Analysis 2016: The Effects Of The Top Five Macroeconomic Factors, Dec. 16, 2016
- Credit FAQ: Analyzing The Real Estate Characteristics Of Data Centers, July 25, 2016