Presale:

Aligned Data Centers Issuer LLC (Series 2023-2)

November 8, 2023

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Preliminary rating

Class	Preliminary rating(i)	Preliminary amount (mil. $)	Maximum LTV ratio (%)(ii)	Anticipated maturity	Legal maturity
A-2	A- (sf)	250	70	Nov. 15, 2028	Nov. 16, 2048

Note: This presale report is based on information as of Nov. 8, 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-anticipated repayment date additional interest. (ii)The maximum allowable class A LTV ratio, per the transaction documentation. LTV--Loan-to-value.

Profile

Expected closing date	Nov. 24, 2023
Collateral	Primarily the asset entities' real property interests in the data centers, the personal property and fixtures located on the data centers, tenant leases, reserves and escrows, certain transaction accounts, and the equity interest in each of the asset entities.
Issuer	Aligned Data Centers Issuer LLC.
Manager	Aligned Data Centers LLC.
Servicer	KeyBank N.A.
Indenture trustee	Wilmington Trust N.A. (A-/ Stable/A-2).
Sole structuring advisor	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 that it aims to develop and publish specific criteria for this type of securitization. The ratings that S&P Global Ratings assigns 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.

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18, 2023).

We currently rate data center securitizations under our criteria, "Principles of Credit Ratings," published Feb. 16, 2011, with certain stress assumptions used from our criteria "Methodology And Assumptions For Rating North American Single-Tenant Real Estate Triple-Net Lease-Backed Securitizations," published March 31, 2016. Although these criteria were partially superseded by our new triple-net criteria, "North American Real Estate Securitizations Backed By Triple-Net Leases: Methodology And Assumptions," published Aug. 24, 2023, we will continue to use them when rating data center securitizations. Wholesale data center leases are not in the scope of our new or old triple-net ABS criteria.

Transaction Overview

Aligned Data Centers Issuer LLC's (Aligned's) series 2023-2 class A-2 note issuance is the securitization of real estate and tenant lease payments for space and electrical capacity in Aligned Data Centers LLC's (the manager) seven operating wholesale turnkey data centers located in Plano, Texas; Phoenix, Ariz.; West Jordan, Utah; West Valley City, Utah; Ashburn, Va.; and Chicago, Ill.

One new data center, located in the Northlake area of Chicago, will be added to the master trust at series 2023-2 closing. Since the series 2023-1 issuance, the aggregate appraised value increased to approximately $4.258 billion from $3.813 billion, driven by the property addition.

Series 2023-2 will be the fourth issuance on the master trust and shares collateral with Aligned's series 2021-1, series 2022-1, and series 2023-1 notes. The series 2023-2 class A-2 notes are pari passu to the series 2021-1 class A-1 and A-2 notes, series 2022-1 class A-2 notes, and series 2023-1 class A-2 notes (collectively, class A notes). The series 2021-1 class B notes are subordinate to the class A notes. As of the series closing date, the issuer will be permitted to draw on the class A-1 variable funding note (VFN) up to $150 million under the transaction documents. Including the $250 million of series 2023-2's class A-2 notes, and assuming a full draw of the VFN class, the total debt outstanding at the series 2023-2 closing date is $2.54 billion, resulting in estimated gross loan-to-value (LTV) ratios of 56.13% and 59.65% for the class A notes and series 2021-1 class B notes, respectively (excluding the liquidity reserve amount). The table below shows the outstanding ratings on the master trust.

Outstanding ratings

Issue	Rating	Balance at issuance (mil. $)	Current balance (mil. $)	Anticipated maturity	Legal maturity
Series 2021-1 class A-1	A- (sf)	150.00(i)	0.00	August 2026	August 2046
Series 2021-1 class A-2	A- (sf)	1,050.00	1,050.00	August 2026	August 2046
Series 2021-1 class B	BBB (sf)	150.00	150.00	August 2026	August 2046
Series 2022-1 class A-2	A- (sf)	400.00	400.00	October 2027	October 2047
Series 2023-1 class A-2	A- (sf)	540.00	540.00	August 2028	August 2048

(i)Maximum commitment on series 2021-1 class A-1 notes is $150 million.

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The transaction features an approximately $53.89 million liquidity reserve account at closing, cash trap and early amortization trigger at 2.00x and 1.25x three-month DSCR levels, respectively, and a net capacity reduction trigger. The series 2023-2 class A-2 notes has zero annual scheduled amortization, a five-year anticipated repayment date (ARD), and 25-year legal maturity.

Rationale

The preliminary rating assigned to Aligned's data center revenue notes, series 2023-2, reflects:

- Our view of the lease portfolio's projected performance;
- The real estate value;
- The manager's and the servicer's experience;
- The manager and indenture trustee-provided advances;
- The available cushion as measured by the estimated closing date debt service coverage ratio (DSCR) of approximately 2.56x;
- The initial liquidity reserve deposit of $53.89 million covering the higher of six months of note interest and senior expenses;
- The executed forward starting lease reserve deposit of $17.4 million; and
- The transaction's structure.

Environmental, Social, And Governance

Our rating analysis considered the potential exposure of the transaction to environmental, social, and governance (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.

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 a relatively high concentration by geography and number of properties. Nonetheless, the properties are designed to be resilient to prolonged power outages, and the geographic diversity of the collateral pool may partially mitigate these environmental risks. Aligned's collateral pool consists of seven data centers located in five states, a similar concentration to other rated data center securitizations. To mitigate risks from extreme weather events (such as flood or earthquake), fire and casualty events, or incidents of terrorism, tenants generally have insurance policies to mitigate the risk of natural disasters and damage-causing events.

Social and governance factors do not directly impact our credit analysis for this sector. 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. We considered Aligned's strategy, risk management, and internal controls within our operational risk assessment framework. 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.

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In addition, the issuer expects that the notes will constitute green bonds, based on the generally accepted market principles for classification of securities as "green bonds" published by the International Capital Markets Assn. The issuer is expected to use the transaction's proceeds to fund future green projects, such as renewable energy development, energy efficiency, climate change adaptation, and sustainable water management. The issuer intends to request assurance by an external auditor or other third-party statement on the proceeds allocation to eligible green projects one year after issuance. However, the issuer does not make any representation in the transaction document regarding the allocation or ongoing compliance with the relevant industry standards (i.e., the 2023 Green Bond Principles).

Key Rating Considerations

Transaction strengths

We consider the following to be the transaction's strengths:

- The current tenants' high average credit quality (79.0% are investment-grade or equivalent (rated 'BBB-' and above) weighted by annualized adjusted base rent (AABR);
- Low customer churn rates, supported in part by the high cost of tenant relocation;
- The leases' importance to the tenants' core businesses;
- The balanced supply and demand for wholesale data center space in the data centers' respective locations;
- The experienced servicer (KeyBank N.A.);
- The class A LTV ratio, which is constrained at 70.0% of the assets' appraised value at closing;
- Draw conditions for the VFNs, which require post-draw maintenance of a maximum 70.0% LTV ratio and a minimum 2.0x DSCR;
- The liquidity reserve is sized to the greater of six months of note interest and 12 months of priority expenses and maintenance capital expenditures, compared to three months of interest coverage in most of the other hyperscale data center transactions that we have rated;
- The executed forward starting lease reserve funded at approximately $17.4 million at closing; and
- The transaction's structural features, including performance tests that trigger cash trapping or early amortization if the DSCR and leased capacity drop below certain minimum thresholds.

Transaction weaknesses

We consider the following to be the transaction's weaknesses:

- The manager's relatively short operating history in the data center industry;
- A shorter weighted average remaining term (5.8 years weighted by AABR) than the other hyperscale data center transactions that we have rated;
- The limited tenant diversity (28.6% of total AABR is attributable to one 'BBB' rated tenant, and 79.5% of total AABR is attributable to the top five tenants);

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- 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 could prove insufficient if a disruptive event, such as a natural disaster, rendered any of the data center campuses inoperable for an extended period of time;
- The limited restrictions on the terms of future eligible leases, such as tenant credit quality, contract length, and optional termination features, which means the overall credit risk profile of the lease portfolio 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, acquire, and operate their own data centers);
- The supply and demand conditions within the data centers' local markets, which could change adversely over time, driving down lease rates or driving up vacancy rates;
- The potential for higher-than-expected budgeted operating and maintenance capital expenditures due to various macroeconomic factors (i.e., inflation, increased labor costs, power constraints, or supply chain shortages that could affect expenditures);
- The high current demand for data center operations personnel, which could make it expensive to replace current key members of the sponsor's leadership team, including the chief operating officer and senior engineering team members; and
- The occurrence of a change of control from Aligned to certain key tenants' direct competitors that could lead to the early termination of those leases.

Mitigants to transaction weaknesses

We believe 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 duplicating network gear, racks, servers, and related fit-out);
- 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;
- Decreased wholesale data center demand due to the migration of the manager's smaller tenants to the public cloud or retail co-location that may be offset by increased demand from the manager's larger tenants, some of which are themselves retail co-location and public cloud providers;
- Interest, priority operating expenses, and maintenance capital expense advancing by manager, with a backup obligation by the indenture trustee, Wilmington Trust N.A.;
- The stress scenarios performed in our cash flow analysis, which considered the pool's industry concentration, the limited industry history, and the potential for downward migration in average tenant credit quality;

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- The timely interest and ultimate principal payments paid on the notes by the legal final maturity under our stress scenarios; and
- The change of control, which 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, and electrical power systems and network connections. The wholesale data center operator, Aligned, is responsible for maintaining the facility's infrastructure, providing physical security, and re-leasing the sites' capacity as it becomes vacant.

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 the wholesale or retail data center model, 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.

Data center leases are structured in various ways, including triple-net, modified gross, or gross leases. Triple-net leases require tenants to reimburse the site manager for costs, including taxes, insurance, operating expenses, and electricity. Modified gross leases, on the other hand, only require the tenants to reimburse the manager for their electricity expense. Under both types of leases, tenants are responsible for all costs related to the provision, installation, and upkeep of their equipment and network connectivity.

Sector outlook

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 data centers operated by third parties. Overall supply and demand is relatively balanced as new data center development has been constrained in certain markets by site availability and lingering supply chain issues, and more recently by 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, coupled 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.

In addition, we believe long-term industry risks include, among others, shifting technology, cloud service providers in-sourcing their data center needs, tenant concentration, and weaker pricing trends in hyperscale segments. Nonetheless, market data suggests that 2022 through first-half 2023 vacancy rates were low for key data center markets and rental rates increased year-over-year.

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Market summary

Chicago

Chicago is the primary connectivity hub of the Midwest and is the second-largest data center market in the U.S., behind Northern Virginia, per the appraiser. The market has experienced an influx of capacity since 2017, which is largely driven by several Fortune 500 companies relocating to the area, requiring network-dense, low latency connectivity to both coasts. Since 2019, large data center developments are also incentivized by data center-specific tax breaks, including a 20-year sales tax exemption for equipment and building in an impoverished area, and the deregulation of the energy industry, which offers affordable electricity, ranging from $0.08 to $0.09 per kilowatt (kW) per hour. Per the appraiser, the wholesale turnkey modified gross leases range from $150 to $180 per kW per month in the Chicago downtown area and can be as low as $115 per kW per month in the suburbs. The 36 megawatt (MW) Chicago property is leased at a slightly lower rate partially because of the tenant's deployment size and long lease term.

Northern Virginia

Northern Virginia is home to the largest data center market in the world in terms of operational sq. ft. 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.

Phoenix

Phoenix is the sixth largest data center market, as estimated by 451 Research, and home to more than two million sq. ft. of data center space, operating more than 400 MWs of data center capacity. Phoenix benefits from good connectivity to primary markets, lower operating costs, a stable climate with low risk of natural disasters, and tax incentives. The typical lease rate for hyperscalers ranges from $89 to $95 per kW per month, while smaller capacity deployments typically start at $107 per kW per month, and can reach up to $155 per kW per month.

Dallas

Dallas is the fourth-largest data center market in North America behind Northern Virginia, Chicago, and the New York metropolitan area. Dallas has experienced significant economic growth since 2016, and several Fortune 500 companies have relocated to the area. The Dallas data center market appeals to operators and users seeking a central location, a strong local economy, favorable climate, reliable power grid, and relatively low risks of natural disasters. Dallas offers inexpensive land, development incentives, low tax rates, and other factors, making development less expensive than other markets. According to the appraiser, the rent on wholesale leases in Dallas typically range from $80 to $130 per kW per month.

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Salt Lake City Classified by 451 Research as a secondary multi-tenant data center market, Salt Lake City's market comprises approximately 24 data centers, totaling nearly 408,500 sq. ft. of operational space and more than 88 MW of capacity. Known as "Silicone Slopes," the area is home to over 6,500 technology companies and has a high concentration of government operations. Salt Lake City appeals to enterprise users from the West Coast seeking lower-cost solutions, benefiting from an average combined sales tax rate in Utah of about 6.94%, lower than Nevada's 8.14% and California's 8.56%, and an average power rate of $0.06 per-kW-hour (kWh), lower than Nevada's $0.065/kWh and California's $0.13/kWh. These cost advantages, along with the overall lower costs of operation and geographic diversity for secondary/disaster recovery space, contribute to Salt Lake City's attractiveness as a data center market.

Business Description: Aligned

Aligned Energy Holdings L.P. (and subsidiaries) is an owner, operator, and developer of enterprise-class, multi-tenant data center properties. Formed in 2015, Aligned Data Centers LLC owns and operates nine data center campuses, and five of which, are included in the securitization portfolio. The securitized data centers comprise 288 MW of built turnkey capacity available and an aggregate of 2,243,757-sq.-ft. gross data center space available to tenants to operate their servers and computing equipment. Aligned's management team has substantial experience in commercial real estate, and data center deployments and operations. Aligned's customer base includes tenants across a range of sectors, such as cloud, technology, and financial services, among others.

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 and to issue notes. The issuer will be a direct, wholly owned subsidiary of ADC Guarantor LLC, the guarantor, and an indirect wholly owned subsidiary of ADC Holdco LLC, the parent.

Series 2023-2 class A-2 notes is issued in addition to the existing series 2021-1, 2022-1, and 2023-1 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.

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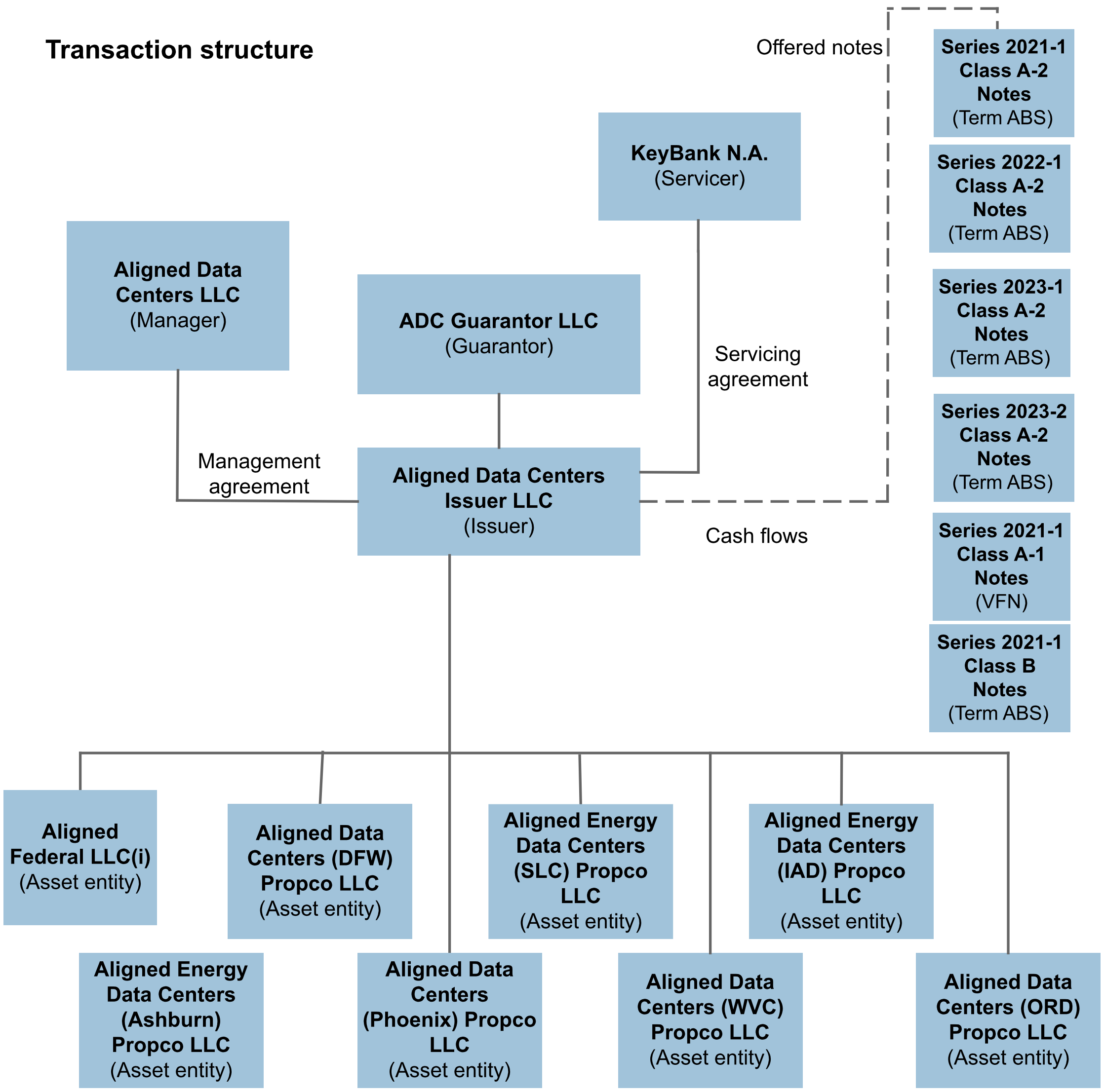
Chart 1



(i)Receipts from Aligned Federal LLC are not part of the transaction. VFN--Variable-funding notes.

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Pool And Structural Characteristics

The series 2023-2 issuance is a securitization of lease revenue and property value, secured by fee simple ownership interests in seven operating wholesale data centers. The data centers are located in Texas, Arizona, Utah, Illinois, and Virginia.

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

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Table 1

Pool Characteristics

	Aligned 2023-2	Aligned 2023-1	Aligned 2022-1	Stack 2023-3(i)	VDCR 2023-1/2023-2	CyrusOne 2023-1	Sabey 2023-1	Vantage 2023-1	Compass 2022-1
Appraised value of data centers (mil. $)	4,258	3,813	2,626	2,544	2,068	960	2,144	3,718	1,131
No. of data center campuses	7	6	5	8	8	5	6	13	13
No. of tenants	33	32	32	24	11 (not including enterprise tenants)	57	109	18 (not including enterprise tenants)	5
S&P Global Ratings' value (mil. $)(ii)	2,131.75	1,803.00	1,279.00	1,445.00	1,138.00	491.00	936.00	1,883.00	452.00
S&P Global Ratings' weighted average cap rate (%)(iii)	8.6	8.7	8.7	8.7	8.8	8.6	8.7	8.8	9.1
CLP leased (kW)	323,836	236,496	161,466	136,965	169,173	64,746	94,774	174,422	43,525
Capacity ramped (kw)	246,258	185,128	130,308	129,500	152,674	64,746	79,498	163,071	34,911
Total potential CLP (kw)	323,836	236,496	162,000	147,130	169,173	65,250	94,774	176,100	43,525
Annualized adjusted base rent (AABR) (mil. $)	346.3	254.8	174.0	187.4	159.0	77.7	137.4	272.9	55.1
Turnkey (%)(iii)	100.0	100.0	100.0	100.0	100(iv)	100.0	83.2	100(v)	100.0
Powered Shell (%)(iii)	0.0	0.0	0.0	0.0	0.0	0.0	16.8	0.0	0.0
% leases triple-net(iii)	0.0	0.0	0.0	38.7	4.5	0.0	16.8	0.0	32.8
% leases modified gross (iii)	100.0	100.0	100.0	61.3	95.5(iv)	100.0	83.2	100.0 (v)	67.2
Weighted average original lease term (years) (weighted by AABR)	7.6	7.5	7.0	10.9	8.1	8.8	11.8	11.8	10.0
Weighted average remaining lease (years) (weighted by AABR)	5.8	5.4	5.0	6.3	6.6	5.2	6.3	7.7	5.6
Range of original lease (mos.)	36-180	36-180	36-144	36-206	36-180	18-162	7-420	36-240	53-182
Range of remaining lease (mos.)	3-176	3-179	1-120	4-133	3-173	1-141	1-199	2-163	3-168

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Table 1

Pool Characteristics (cont.)

	Aligned 2023-2	Aligned 2023-1	Aligned 2022-1	Stack 2023-3(i)	VDCR 2023-1/2023-2	CyrusOne 2023-1	Sabey 2023-1	Vantage 2023-1	Compass 2022-1
Closing date DSCR	2.56	2.47	2.47	1.96	1.64	1.63	1.92	2.47	2.22
% of investment-grade tenants (iii)	79.0	74.0	62.2	92.2	94.2	69.6	78.0	89.2	67.2
Largest five tenants (% of AABR)	79.5	75.8	74.3	80.5	93.1	86.1	49.2	83.3	100.0
Largest five tenants(iii)	Tenant 1 (28.6%), tenant 2 (25.2%), tenant 3 (11.3%), tenant 4 (9.0%), and tenant 5 (5.4%)	Tenant 1 (25.6%), tenant 2 (21.5%), tenant 3 (13.4%), tenant 4 (8.2%), and tenant 5 (7.1%)	Tenant 1 (26.4%), tenant 2 (19.3%), tenant 3 (11.3%), tenant 4 (10.5%), and tenant 5 (6.9%)	Tenant 1 (42.0%), tenant 2 (20.2%), tenant 3 (8.2%), tenant 4 (5.0%), tenant 5 (5.0%)	Tenant 1 (31.1%), tenant 2 (22.9%), tenant 3 (21.9%), tenant 4 (12.7%), and tenant 5 (4.5%)	Tenant 1 (45.3%), tenant 2 (19.2%), tenant 3 (11.3%), tenant 4 (5.6%), and tenant 5 (4.8%)	Tenant 1 (19.9), tenant 2 (11.2), tenant 3 (7.9), tenant 4 (5.3), tenant 5 (4.9)	Tenant 1 (57.3%), tenant 2 (12.4%), tenant 3 (4.8%), tenant 4 (4.7%), and tenant 5 (4.0%)	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)	Tech (40.3%), cloud (38.1%), and financial services (13.4%)	Tech (43.3%), cloud (34.5%), and financial services (11.1%)	Cloud (40.7%), tech (34.8%), and financial services (12.7%)	Big data (53.1%), Media (20.2%), Telecommunications (12.6%)	Cloud (42.9%), software (31.1%), and social media (22.9%)	IT (87.5%), Other (6.7%) and financials (4.7%)	Technology (73.5), telecom (6.3), health care (5.3)	Cloud (60.6%), tech hardware (16.4%), and software (6.3%)	Hyperscaler (67.2%), colocation datacenter (28.8%), and enterprises (4.0%)
State concentrations(iii)	Virginia (38.6%), Arizona (28.0%), Utah (19.9%), Illinois (9.7%), and Texas (3.7%)	Virginia (39.6%), Arizona (34.9%), Utah (20.3%), and Texas (5.2%)	Arizona (43.3%), Utah (25.1%), Virginia (24.2%), and Texas (7.5%)	California (33.4%), Texas (18.2%), Oregon (17.3%), Illinois (15.2%), Virginia (10.0%), Georgia (5.1%), Ohio (0.8%)	Virginia (57.6%) and Canada (42.4%	Virginia (55.0%), and Texas (45.0%)	Washington (77.7), Virginia (14.7), and New York (7.6)	California (71.5%), Washington (11.8%), and Quebec (16.7%)	Quebec (54.2%), Ontario (12.9%), Texas (8.0%), Tennessee (7.3%), North Carolina (7.2%), Minnesota (6.7%), and Oklahoma (3.6%)

(i)Distressed tenant leases are excluded. (ii)Represents the liquidation value estimated in accordance with "CMBS Global Property Evaluation Methodology," published Sept. 5, 2012. (iii)By annualized adjusted base rent. (iv)Including 0.9% etnerprise leases. (v)Including 2.0% enterprise leases. Aligned--Aligned Data Centers Issuer LLC. Sabey- Sabey Data Center Issuer LLC. Compass--Compass Datacenters Issuer LLC. Stack--Stack Infrstrastructure Issuer LLC. Vantage--Vantage Data Centers Issuer LLC. VDCR--Retained Vantage Data Centers Issuer LLC. CLP--Critical load power. DSCR--Debt service coverage ratio. kW--Kilowatt.

Charts 2-5 provide additional details about the underlying portfolio as of the July 1, 2023, statistical cutoff date.

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Chart 2

Portfolio distribution by tenant

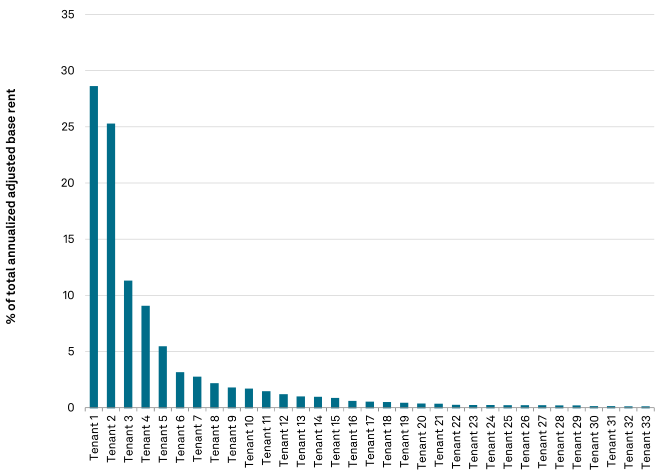

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Chart 3

Tenant credit rating

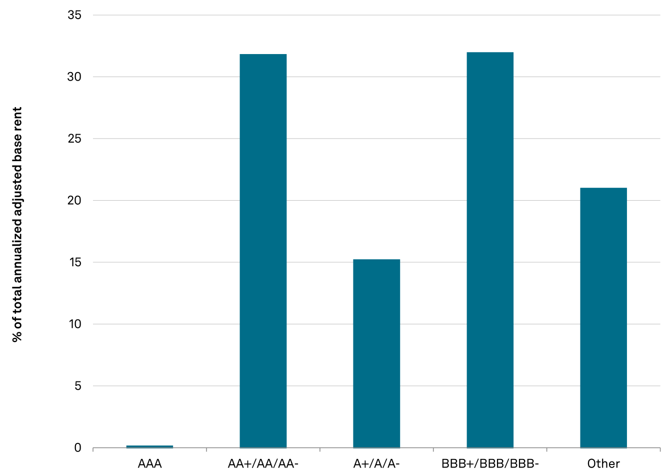

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Chart 4

Portfolio distribution by industry

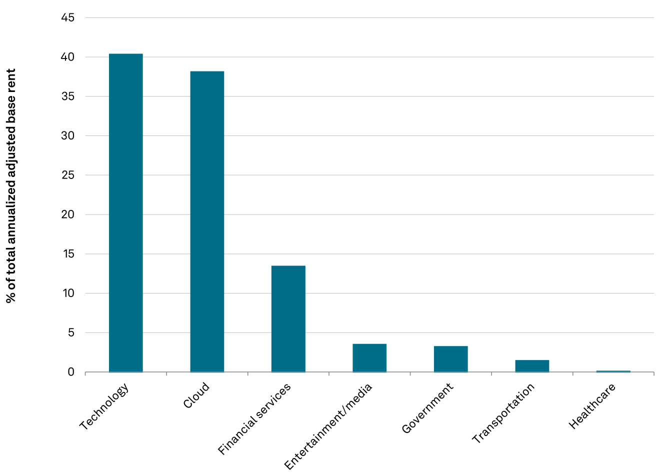

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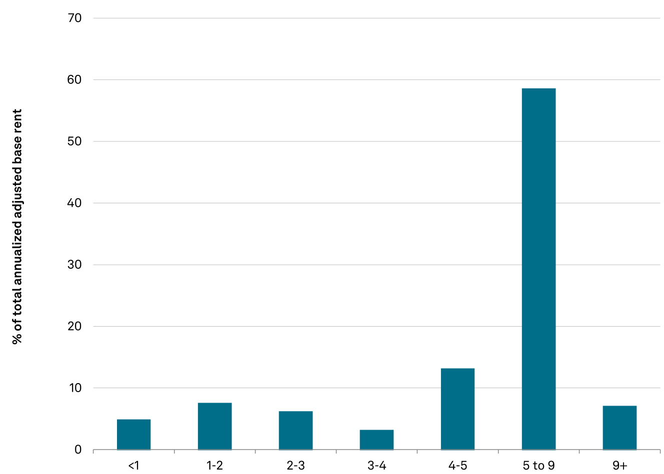
Chart 5

Portfolio distribution by remaining term (years)



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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

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delinquencies and defaults;

- Maintaining insurance, including property, casualty, and business interruption insurance;
- 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;
- Managing capital improvements and other construction in connection with the leasing of site space; and
- Making debt service advance and property protection advance.

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

Because all arrangements in the portfolio are turnkey, 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 table 2.

Table 2

Expenses

Expense category	Payment priority	Expenses covered	Monthly budgeted expense amount(i)
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(ii).	$4.42-$14.57 per kW, subject to an annual 2.0% escalator.

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Table 2

Expenses (cont.)

Expense category	Payment priority	Expenses covered	Monthly budgeted expense amount(i)
Operating expenses	Seventh payment in the application of funds (following the payment of note interest)	Site labor operations, repairs and preventative maintenance, utilities (excluding electricity), and security.	$8.84-$22.68 per kW for each data center, subject to an annual 2.0% escalator.
Maintenance capital expenses	Seventh 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.	$4.34 per kW subject to an annual 2.0% escalator.

(i)Applied against aggregate critical load power of the completed data centers. (ii)The issuer has fee simple ownership over all real estate. 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 break-even 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

On each distribution date, the available funds will be used to pay expenses, interest, and principal in the priority shown in table 3.

Table 3

Payment waterfall

Priority	Payment
1	Priority expense reserve.
2	The prior payment dates' unpaid indenture trustee, servicing, and other servicing fees; then unreimbursed indenture trustee advances and interest; then the current payment date's indenture trustee, servicing, and other servicing fees; and then unreimbursed manager advances and interest.
3	Additional issuer expenses to the indenture trustee, servicer, and/or other applicable person so as not to exceed the annual additional issuer expense limit; and then the VFN agent fee.
4	Accrued note interest for all notes, and accrued and unpaid commitment fees, as well as other fees, expenses, and other amounts due to the VFN notes (including letter of credit fees).
5	Monthly expense amount to the obligors in excess of amounts drawn from the liquidity reserve for operating and maintenance capital expenditures or liquidity letters of credit.
6	Accrued and unpaid management fee to the manager.
7	Operating expenses and maintenance capital expenditures for the current calendar month in excess of amounts drawn from the liquidity reserve subaccount or liquidity letters of credit, not including servicer-approved monthly expense amounts.
8	The required liquidity reserve amount.

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Table 3

Payment waterfall (cont.)

Priority	Payment
9	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.
10	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-2 monthly amortization amount for any class A-2 notes of a series.
11	If an amortization period is not in effect and no event of default has occurred and is continuing, the additional principal payment amount together with any applicable prepayment consideration.
12	If, after the ARD for any series of outstanding VFN or term notes, an amortization period is not in effect and no event of default has occurred and is continuing, the aggregate unpaid principal balance of the outstanding VFN notes or term notes.
13	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.
14	During an amortization period or continuation of an event of default, the principal balance of all outstanding notes.
15	Contingent interest, deferred contingent interest, post-ARD additional interest, and deferred post-ARD additional interest due.
16	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 person.
17	Operating expenses and maintenance capital expenditures of the asset entities not paid related to items 5 and 7.
18	Executed forward starting lease reserve amount and/or qualified new lease reserve amount, at the manager's direction.
19	Optional payments on the principal to the class A-1 noteholders at the direction of the issuer.
20	Manager-determined amounts to the capital expenditures reserve subaccount.
21	Unreimbursed advances, including advance interest, to the manager.
22	The remaining available funds to the issuer.

VFN--Variable-funding note. LTV--Loan-to-value. ARD--Anticipated repayment date. Class A--The series 2021-1 class A-1 and A-2 notes, series 2022-1 class A-2 notes, 2023-1 class A-2 notes, and series 2023-2 class A-2 notes, collectively.

A cash trap condition will occur if the three-month average DSCR is less than 2.00x (the cash trap DSCR), and it will continue until it is above 2.00x for two consecutive determination dates. During a cash trap condition, if the DSCR is less than 2.00x and greater than or equal to 1.50x, 50.0% of excess cash will be diverted to the cash trap reserve. If the DSCR is less than 1.50x, then 100.0% of excess cash will be diverted to the cash trap reserve until the DSCR reaches 1.25x when an amortization period commences. In addition, a cash trap condition will occur if the net capacity reduction percentage is greater than 10.0%, trapping 100.0% of the excess cash. All funds in the cash trap reserve will be deposited into the available amount if a cash trap condition is ongoing for nine consecutive months or an amortization period commences.

An amortization period will occur if the three-month average DSCR is less than 1.25x (the minimum DSCR), and it will continue until it is above 1.25x for two consecutive determination dates. An amortization period will also commence and remain in effect if the net capacity reduction percentage remains greater than 10.0% for nine consecutive months. Amortization periods triggered by the net capacity reduction percentage could be waived with servicer consent if the DSCR is greater than 2.5x. During an amortization period, all excess cash flow will be applied

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to the notes' aggregate unpaid principal amount sequentially across classes and pro rata among outstanding notes of the same class.

The 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 and B notes to be paid over the succeeding 12 payment dates and the amount of indenture trustee fees and servicing fees due during such period.

The net capacity reduction percentage is calculated as the sum of the aggregate amount of reduction in leased capacity and the aggregate amount of leased capacity allocated to defaulted tenants divided by the maximum of the aggregate amount of leased capacity as of the most recent issue date and the aggregate amount of leased capacity as of the most recent determination date.

The manager 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 manager fails to make an advance, the indenture trustee must make the debt service advance in its place. These requirements for advances serve as a form of liquidity for the notes; however, we do not rely on advances in our cash flow projection.

Draws on the series 2021-1 VFN are subject to post-draw conditions, such as the class A-2 LTV ratio being not greater than 70.0% and three-month average DSCR being greater than or equal to 2.00x.

S&P Global Ratings' Stress Scenario Assumptions

To determine the appropriate preliminary ratings for the series 2023-2 notes, we analyzed the transaction's cash flows utilizing stress assumptions derived in part from our criteria, "Methodology And Assumptions For Rating North American Single-Tenant Real Estate Triple-Net Lease-Backed Securitizations," published March 31, 2016. We ran various cash flow scenarios to test the transaction's sensitivity to changes in default timing, given the transaction's credit enhancement

In our opinion, the risk to the cash flow generated from the portfolio of data centers and their associated leases can be attributed to the following major factors:

- Defaults of the initial pool of tenants (the lessees);
- The property manager's ability to fill the vacant space at a comparable lease rate upon a lessee default or lease expiration;
- 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.

Our cash flow analysis includes the following key cash flow assumptions:

- All leases are rejected in the bankruptcy proceedings for defaulted tenants, given the lack of historical observations of defaulted wholesale data center tenants.
- No property liquidations until the disposition period defined in the transaction documents. 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.

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- We assume 'CCC-' issuer credit ratings for tenants not rated by S&P Global Ratings, based on the lack of performance data for the wholesale data sector.
- We assume that the average credit quality of the tenant pool will have migrated to 'CCC-' by the start of our second default wave, if applicable, from its current 'BBB', given the limited eligibility requirements for future tenants' credit quality.
- We applied re-lease haircuts for both performing and defaulted leases that are consistent with those that are one rating category above the haircut rates specified in the 2016 triple-net lease criteria, given the limited history of wholesale data center lease rates and the uncertainty around future supply and demand conditions. For example, at the 'A' rating category, we would assume a 20% loss in rental income upon lease renewal for a performing lease rather than the 15% specified in the criteria. Similarly, at the 'A' rating category, we would assume a 35% haircut to re-lease rental rates post-default for defaulted leases rather than the 30% specified in the criteria.

We applied two waves of default and used S&P Global Ratings' CDO Evaluator to determine the initial collateral pool's scenario default rate, with the following assumptions:

- The issuer credit rating by S&P Global Ratings on the initial lessee for the first default wave, or 'CCC-' for unrated lessees;
- 'CCC-' for the entire portfolio for the second default wave;
- The allocated collateral value per lease, calculated as each lease's total remaining scheduled payments;
- The current remaining terms of the leases; and
- The higher of portfolio default rate and the largest obligor default rate.

We determined the portfolio's property liquidation value using our commercial real estate methodology (see "CMBS Global Property Evaluation Methodology," published Sept. 5, 2012). 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 location.

Table 4 shows a summary of stress assumptions.

Table 4

Cash flow assumptions

Stress level	A-	BBB
Standard scenario default rate		
Portfolio scenario default rate (default wave 1) (%)(i)	41.9	18.5
Portfolio scenario default rate (default wave 2) (%)(i)	94.0	92.0

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Table 4

Cash flow assumptions (cont.)

Stress level	A-	BBB
Largest-obligor test		
Portfolio scenario default rate (default wave 1) (%)(i)	48.6	45.6
Portfolio scenario default rate (default wave 2) (%)(i)	88.9	83.4
Non-defaulting leases		
Lease rate credit upon renewal (%)	81.7	85.0
Defaulting leases		
Accepted in bankruptcy (%)	0.0	0.0
Rejected in bankruptcy and re-leased (%)	100.0	100.0
Re-lease lag (months)	12	12
Lease rate credit (%)	66.7	70.0
Liquidation proceeds ($)	2,131,754,365	2,131,754,365

(i)The higher of the standard default rate and the largest-obligor test for each wave was selected.

Cash Flow Analysis

To determine whether the available credit support is sufficient to withstand the assumed losses, we examined various simulated cash flow scenarios. In each scenario, the cumulative effects of the assumptions we detailed above were applied. In the first four scenarios, we applied the first four default timing curves (curves 1-4; see table 5), where the first default wave starts in year one, the second default waves starts in year 11, and final liquidation starts August 2045. The second default wave was applied sooner than we would typically apply it for other data center transactions because Aligned's portfolio has a shorter weighted average original term of 7.6 years and remaining term of 5.8 years at series 2023-2 issuance (not considering renewal options), compared with the average nine-to-13-year original and six-to-nine-year remaining lease terms we've seen in other data center lease portfolios. In addition, because of the comparatively lower remaining lease terms, we tested a more front-loaded default timing curve (curve 5 in table 5), with the second default wave commencing in year eight and liquidation in year 15.

Table 5

Default curves

Year	Curve 1 (%)	Curve 2 (%)	Curve 3 (%)	Curve 4 (%)	Curve 5 (%)
1	40	10	10	15	40
2	10	10	10	15	30
3	10	10	10	15	20
4	10	40	10	15	10
5	10	10	10	15	0
6	10	10	10	15	0
7	10	10	40	10	0

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In each rating scenario, we only gave credit to the capacity that is completed. In each scenario, assuming the maximum commitment of $150 million on the VFN, the notes pay timely interest and full principal by their rated final maturity, and there were no deferred expenses (priority, operating, or maintenance capital expenses). 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.

Sensitivity Analysis

Assuming a base-case scenario in which we assumed contractual cash flows with no losses and one renewal at the same lease rate following the initial lease term, 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 notes could withstand a 41.0% reduction in monthly gross revenue and still pay timely interest and full principal by the rated final maturity, while the class B notes could withstand a 40.0% reduction.

Sensitivity run 2: Maintenance capital expense stress

We found that the class A notes could withstand a 9.3x increase in monthly budgeted maintenance capital expenses and still pay timely interest, all monthly budgeted maintenance expenses, and full principal by the rated final maturity, while the class B notes could withstand a 9.0x increase.

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

We found that the class A and B notes could withstand a 10.0% annual escalation of priority expenses, operating expenses, and maintenance capital expenses (instead of the 2% assumed in the rating scenario) and still pay timely interest, priority expenses, operating expenses, maintenance capital expenses, 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 timely interest on class A and B notes;
- A failure to pay principal on any notes by legal final maturity;
- A failure to pay any other amount, to the extent that on the payment date there are funds available in the transaction accounts;
- A failure to comply with financial reporting requirement;
- A failure to comply with the covenants in the indenture or transaction documents;
- A material breach of the representations or warranties;

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- The issuer being subject to involuntary bankruptcy proceedings;
- The issuer initiating voluntary bankruptcy proceedings;
- A change of control resulting in the specified tenant's lease termination; and
- The guarantor ceasing to own 100.0% of the issuer, or the issuer ceasing to own 100.0% of any asset entity.

Legal Matters

We expect the issuers' special-purpose entity provisions to be consistent with our bankruptcy-remoteness criteria. In rating this transaction, we will review the legal matters that we believe are relevant to our analysis, as outlined in our criteria.

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

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Related Research

- Economic Outlook U.S. Q4 2023: Slowdown Delayed, Not Averted, Sept. 25, 2023
- Credit FAQ: How U.S. Data Centers Are Navigating Inflation And Recession Risks, July 21, 2022
- 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

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