

CREDIT OPINION

20 September 2023

New Issue



Closing date

20 September 2023

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Bayfront Infrastructure Capital IV Pte. Ltd.

New Issue – A project finance and infrastructure asset-backed transaction

Capital structure

Exhibit 1

Definitive ratings

Class	Ratings	Amount (\$ millions)	Share of Capital Structure (%)	Effective Subordination (%) ^(a)	Coupon ^(b)
Class A1 Notes	Aaa (sf)	170.60	41.58	30.39	6m Compounded O/N SOFR+ 1.50%
Class A1-SU Notes	Aaa (sf)	115.00	28.03	30.39	6m Compounded O/N SOFR+ 1.425%
Class B Notes	Aa1 (sf)	54.50	13.28	17.11	6m Compounded O/N SOFR+ 2.25%
Class C Notes	A3 (sf)	31.60	7.70	9.41	6m Compounded O/N SOFR+ 4.90%
Class D Notes	Not rated	13.00	3.17	6.24	6m Compounded O/N SOFR+ 3.50%
Preference Shares	Not rated	25.61	6.24	n/a	Residual
Total		410.31	100.00		

(a) Effective subordination is based on the \$410.3 million target par amount of the portfolio. Class A1 notes and Class A1-SU notes rank pari passu with each other in the issuer's priority of payments.

(b) Upon a change in notes' payment frequency from semiannual to quarterly, the reference rate would change to three-month Compounded Overnight Secured Overnight Financing Rate (SOFR).

Source: Joint Global Coordinators

Summary

Bayfront Infrastructure Capital IV Pte. Ltd. (the issuer) is a project finance collateralized loan obligation (the CLO or the transaction) cash flow securitization, backed by a \$410.3 million portfolio of bank-syndicated senior secured project finance and infrastructure loans and bonds to projects in Asia-Pacific, the Middle East, Africa and the Americas. The issuer has entered into a purchase and sale agreement with [Bayfront Infrastructure Management Pte. Ltd.](#) (Bayfront or the sponsor) to acquire or to participate in the loans and bonds that form the \$410.3 million initial portfolio. This is the fourth CLO transaction sponsored by Bayfront. In our credit analysis, we considered the attributes of each underlying assets, including the assets' default probability, recovery rate, asset correlation, loan participation risk, loan term, spread, industry sectors and subsectors, and geographic concentration.

BIM Asset Management Pte. Ltd. (BIMAM or the collateral manager), a wholly owned subsidiary of Bayfront, manages this transaction. Based on our knowledge of its organizational structure, staffing, experience in the infrastructure loan market, systems and controls, we believe that the collateral manager is capable of managing this transaction. For

further discussion about the collateral manager, see the "Asset description" section of this report.

The issuer issued several classes of notes that receive semiannual interest payments and principal payments, in order of seniority. In addition, the issuer also issued preference shares that receive residual interest and principal payments.

We measured the credit risk of the notes using Moody's CDOROM™ and CDOEdge™ models, which incorporate asset characteristics noted above and the transaction's structural features respectively.

Credit strengths

- » **High credit quality portfolio:** The weighted average rating factor (WARF) of the identified portfolio, based on credit estimates, is 1,090 before applying the credit estimate notching adjustments, and 1,279 after applying the credit estimate notching adjustment. (See "Asset description")
- » **High asset recovery prospects:** Bank-syndicated senior secured project finance and infrastructure loans historically have had high recovery rates. Part of the portfolio in this transaction has also benefited from external credit support, which will also improve loan recovery prospects. (See "Asset analysis - Additional asset analysis")
- » **Short transaction life:** The weighted average life of the identified portfolio is about six years, and the transaction has a three-year replenishment period. Asset additions are subject to strict criteria. (See "Asset description - Assets as of the closing date")
- » **No currency mismatch:** All the loans, bonds and notes are denominated in US dollars. (See "Asset description")
- » **No long-dated assets:** All the loans and bonds in the identified portfolio have maturities before the legal maturity date of the transaction. The collateral manager has no right to consent to asset maturity amendments that result in the asset's maturity extending beyond the transaction's legal maturity date. (See "Asset analysis - Additional asset analysis")
- » **Remote likelihood of an OC-based event of default:** An over-collateralization (OC)-based event of default and the associated liquidation of the portfolio are unlikely because the event of default par ratio trigger of 102.5% is well below the initial OC level of 143.7%. (See "Securitization structure analysis - Additional structural analysis")

Credit challenges

- » **Unrated loan portfolio:** The identified portfolio includes loans and bonds relating to 33 projects. The underlying bonds from a single project are rated by us. None of the underlying project and infrastructure loans are rated by us. We assigned a credit estimate to each of the loans in the portfolio. (See "Asset description" and "Asset analysis - Additional asset analysis")
- » **High project and sector concentration risk:** The identified portfolio has a high exposure to a few projects and in energy-related sectors such as power generation renewables and non-renewables, and oil and gas. The exposure to the largest obligor group, linked operationally and through ownership, in the power generation renewables sector, comprises about 10.2% of the portfolio, greater than the subordination of the Class C and D notes. Certain projects also involve common off-takers or guarantors. A significant credit deterioration of any of these projects would have a negative rating impact on the Class C notes. In our analysis, we considered several stress scenarios assuming default of the largest obligor group or higher asset correlation. (See "Asset analysis - Additional asset analysis")
- » **High loan participation exposure:** The issuer acquired indirect loan exposure to about 34.5% of the identified portfolio by entering into participation agreements with several highly rated banks, instead of being a direct lender of record. (See "Asset analysis - Additional asset analysis")
- » **High country risk:** Of the identified portfolio, 21% portfolio exposure is to projects located in countries with speculative-grade foreign-currency country ceilings, although more than half of these projects benefit from external credit support in the form of guarantees or insurance policies. (See "Asset analysis - Additional asset analysis")

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the issuer/deal page on <https://ratings.moody's.com> for the most updated credit rating action information and rating history.

- » **Recovery period may be long:** The recovery after a project finance loan default may take several years because liquidity for defaulted project finance and infrastructure loans in these regions is uncertain and any workout may take a long time. (See "Asset analysis - Additional asset analysis")
- » **Basis mismatch risk:** The issuer is exposed to basis mismatch as all the rated notes are linked to six-month compounded overnight SOFR. Conversely, 75.1% of the initial target portfolio is linked to daily compounded overnight SOFR, and the remaining 24.9% is linked to term SOFR. All of the compounded overnight SOFR for the assets and rated notes are computed in arrears. We considered this in our analysis. (See "Asset Description")

ESG considerations

In general, our fundamental credit analysis of each underlying issuer takes into consideration environmental, social and governance (ESG) risks at the asset level. Additionally, the diversified nature of the portfolio helps mitigate environmental risks to the transaction. Furthermore, the transaction structure and characteristics of the transaction parties largely mitigate governance risks. Our [General Principles for Assessing Environmental, Social and Governance Risks Methodology](#) explains our general principles for assessing ESG risks in our credit analysis for all sectors globally.

The ESG considerations included in this report are based on the identified portfolio, draft transaction documents, and the structure and characteristics of the transaction provided to us. Accordingly, the ESG considerations are current as of the date of this report. However, the ESG information may not reflect the future composition of the transaction's portfolio.

- » **Environmental:** Most of this transaction's underlying assets in the identified portfolio are categorized within sectors that have been assigned an environmental score of "moderate risk". (See "Asset description – ESG - Environmental considerations")
- » **Social:** Most of the underlying assets in the transaction's identified portfolio are categorized within sectors that have been assigned a social score of "moderate risk" (See Asset description – ESG - Social considerations).
- » **Governance:** This transaction's governance risk is low and is typical of other CLOs in the market. However, for this transaction, we considered additional governance factors, as described in the "ESG - Governance considerations" section. (See "Additional structural analysis – ESG - Governance considerations")

Key characteristics

Exhibit 2

Asset characteristics

Portfolio Metrics	Identified Pool*	Covered Sub-Pool***	Uncovered Sub-Pool***
Portfolio Par Amount	\$410,308,101	\$94,041,220	\$316,266,881
Weighted Average Rating Factor (WARF) before notching adjustment**	1,090	1,601	938
Weighted Average Rating Factor (WARF) after notching adjustment**	1,279	1,601	1,183
Weighted Average Recovery Rate (WARR)	73%	98%	66%
Weighted Average Spread (WAS)****	2.7%		
Weighted Average Life (WAL)	5.7 years		
Moody's Asset Correlation	27%		
Key Asset Types			
Participation Loan	34.5%		
Long-Dated Assets	Nil		
Key Party			
Collateral Manager	BIM Asset Management Pte. Ltd.		
Sponsor	Bayfront Infrastructure Management Pte. Ltd.		

*The identified portfolio represents the assets in the portfolio at closing.

**A two-notch downward adjustment was applied to the largest credit estimates representing 30% of the total portfolio in accordance with the [Global Approach to the Use of Credit Estimates](#) cross-sector rating methodology.

***Covered sub-pool includes loans in the identified portfolio that are covered by external credit providers under certain types of guarantees or insurance policies. The loans and bonds that are not covered by external support are included in the uncovered sub-pool.

****All of the assets in the portfolio are currently linked to SOFR. The WAS over the applicable floating rate index of each respective loan is approximately 2.7% as of the expected closing date, assuming the credit adjustment spread is 26.161 basis points (for loans with quarterly payment frequency) and 42.826 basis points (for loans with semi-annual payment frequency), as published by the International Swaps and Derivatives Association on 5 March 2021.

Sources: Sole Global Coordinator and Moody's Investors Service

Exhibit 3

Securitization structure characteristics

Key Dates	
Closing Date	September 20 2023
Latest Effective Date	Closing date
First Payment Date and Payment Frequency	April 11, 2024 and semiannually thereafter
End of Non-Call Period	October 11 2026
End of Replenishment Period	October 11 2026
Legal Final Maturity	April 11 2044
Key Parties	
Issuer	Bayfront Infrastructure Capital IV Pte. Ltd.
Collateral Manager	BIM Asset Management Pte. Ltd.
Trustee	Citicorp International Limited
Transaction Administrator	Apex Fund and Corporate Services Singapore 1 Pte. Limited
Joint Global Coordinators	Citigroup Global Markets Singapore Pte. Ltd. and Standard Chartered Bank (Singapore) Limited
Lead Managers	Citigroup Global Markets Singapore Pte. Ltd., ING Bank N.V., Singapore Branch, Oversea-Chinese Banking Corporation Limited, SMBC Nikko Capital Markets Limited, Societe Generale and Standard Chartered Bank (Singapore) Limited
Class	Effective Subordination(%)
A1 Notes	30.4
A1-SU Notes	30.4
B Notes	17.1
C Notes	9.4
D Notes	6.2

Source: Joint Global Coordinators

Asset description

The transaction is backed by a portfolio of 40 bank-syndicated senior secured project finance and infrastructure loans and bonds to 33 projects in various countries in Asia-Pacific, the Middle East, Africa and the Americas at closing.

The collateral manager selected the identified portfolio for an amount equal to \$410.3 million, the target initial par amount of the portfolio.

Assets as of the closing date**Target initial par amount**

The transaction's target initial par amount represents the aggregate par amount of assets in the initial portfolio.

Asset acquisition guidelines**Identified portfolio**

The exhibits below provide information about the identified portfolio. All the loans and bonds in the identified portfolio are denominated in US dollars. Of the initial target portfolio, 75.1% is linked to daily compounded overnight SOFR, and the remaining 24.9% is linked to term SOFR, and loan interest is paid either quarterly or semiannually.

The bonds from a single project in the portfolio are rated by us. None of the loans are rated by us. We have undertaken credit estimates for each of them, assessing some of them at the investment-grade level (Moody's credit estimate rating factor of 610 or lower) and some of them at the non-investment-grade level (Moody's credit estimate rating factor of 940 or higher).

Exhibit 4

Credit estimate rating factor distribution of the identified portfolio

Percentage relative to the identified portfolio's par amount

Credit Estimate Rating Factor	% of pool (after notching adjustment)*	% of pool (before notching adjustment)
10-40	3.7%	3.7%
70-180	10.2%	3.2%
260-610	34.8%	30.1%
940-1766	34.5%	36.0%
2220-3490	16.8%	27.0%
Total	100%	100%

*A two-notch downward adjustment was applied to the largest credit estimates representing 30% of the total portfolio in accordance with the [Global Approach to the Use of Credit Estimates](#) cross-sector rating methodology.

Source: Moody's Investors Service

Exhibit 5

Sector and subsector distribution of the identified portfolio

Percentage relative to the identified portfolio's par amount

Sectors and Sub-sectors	% of Identified Pool	Covered Sub-Pool*	Uncovered Sub-Pool*
Power Generation Renewables			
Power-Renewables: Hydro and Geothermal	5.6%	1.6%	4.0%
Power-Renewables: Solar**	16.8%	1.6%	15.3%
Power-Renewables: Wind	7.3%	3.8%	3.5%
Power Generation Non-Renewables			
Power- Electricity Contracted (Coal/Gas)***	28.8%	8.1%	20.8%
Oil/Gas and Commodities			
LNG	15.3%	0.0%	15.3%
Oil	7.0%	0.0%	7.0%
Regulated Assets/Utilities			
Gas distribution or transmission	4.9%	0.0%	4.9%
Regulated Telecom	3.7%	0.0%	3.7%
Large Infrastructure (Market Risk)			
Mining	4.5%	4.5%	0.0%
Others****	2.7%	0.0%	2.7%
Availability based PPP/PFI*****			
Roads-Availability Based	3.5%	3.5%	0.0%
Total	100.0%	22.9%	77.1%

*Covered sub-pool includes loan exposure that is covered by an external credit provider under certain types of guarantees or insurance policies. Uncovered sub-pool includes loan and bond exposures that are not covered by an external credit provider.

**There are two projects within the Power-Renewables: Solar category that includes both solar and wind-based power generation capacity. There is a project in the same category that includes solar and wind-based power generation capacity and battery storage.

***There is no coal-fired power generation project in the Power-Electricity Contracted (Coal/Gas) category of the identified portfolio.

****This relates to a project providing testing, inspection, and certification services.

*****PPP/PFI refers to public private partnership/private finance initiative infrastructure projects.

Source: Moody's Investors Service

Exhibit 6

Country distribution of the identified portfolio

Percentage relative to the identified portfolio's par amount

Country of Project	Foreign Currency Country Ceiling	Foreign Currency Country Rating	% of Identified Pool	Covered Sub-Pool*	Uncovered Sub-Pool*
United States of America	Aaa	Aaa	2.7%	0.0%	2.7%
United Arab Emirates	Aaa	Aa2	3.7%	0.0%	3.7%
Qatar	Aa1	Aa3	6.9%	0.0%	6.9%
China	Aa1	A1	6.1%	0.0%	6.1%
Kuwait	Aa2	A1	2.0%	0.0%	2.0%
Malaysia	Aa2	A3	1.2%	0.0%	1.2%
Saudi Arabia	Aa2	A1	4.9%	0.0%	4.9%
Indonesia	A3	Baa2	22.9%	6.0%	16.9%
India	A3	Baa3	16.2%	0.0%	16.2%
Brazil	Baa2	Ba2	7.0%	0.0%	7.0%
Senegal	Baa3	Ba3	5.8%	0.0%	5.8%
Vietnam	Ba1	Ba2	5.6%	3.5%	2.2%
Oman	Ba1	Ba2	4.2%	3.2%	0.9%
Jordan	Ba1	B1	7.1%	6.7%	0.4%
Bangladesh	B1	B1	3.6%	3.4%	0.2%
Total			100.0%	22.9%	77.1%

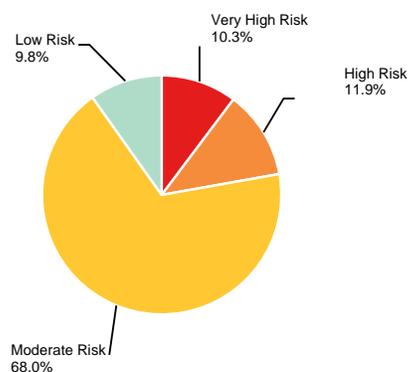
*Covered sub-pool includes loan exposure in the identified portfolio that is covered by an external credit provider under certain types of guarantees or insurance policies. Uncovered sub-pool includes loan and bond exposures that are not covered by an external credit provider.

Source: Moody's Investors Service

ESG - Environmental considerations

Most of the underlying assets in the transaction's identified portfolio are categorized within sectors that have been assigned an environmental score of moderate risk.¹ The exhibits below show the exposure of the underlying issuers to each environmental sector risk level (1) in the CLO's identified portfolio; and (2) of all outstanding US CLOs rated by us.

Exhibit 7

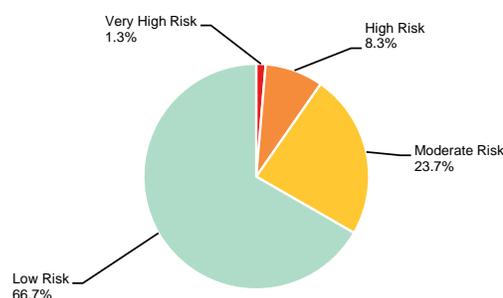
Environmental risk scores, and high and very high risk industries
Identified portfolio level

"Very high risk" industry exposures: Mining - Metals and Other Materials, excluding Coal; Oil and Gas - Independent Exploration and Production.

"High risk" industry exposures: Oil and Gas - Midstream Energy.

Source: Moody's Investors Service

Exhibit 8

Environmental risk scores
All US CLOs rated by us

"Very high risk" industry exposures (five largest): Chemicals - Commodity; Oil and Gas - Refining and Marketing; Oil and Gas - Independent Exploration and Production; Mining - Metals and Other Materials, excluding Coal; Coal Mining and Coal Terminals.

"High risk" industry exposures (five largest): Chemicals - Specialty; Oil and Gas - Midstream Energy; Airlines; Surface Transportation and Logistics; Unregulated Utilities and Power Companies.

Source: Moody's Investors Service

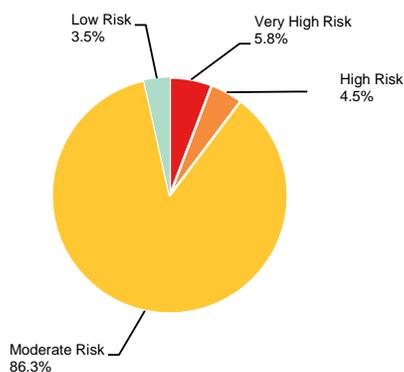
As explained in our [environmental credit risk heat map](#), our environmental sector classifications are broadly based on our rating methodologies. In addition, our overall sector environmental risk scoring scale includes scores of “very high risk”, “high risk”, “moderate risk” and “low risk”.

ESG - Social considerations

Without regard to the pandemic-related risks, a large majority of the underlying assets in the transaction's identified portfolio are categorized within sectors that have been assigned a social score of moderate risk.⁴ The exhibits below show the exposure of the underlying issuers to each social sector risk level (1) in the CLO's identified portfolio; and (2) of all outstanding US CLOs rated by us.

Exhibit 9

Social risk scores, and high and very high risk industries Identified portfolio level



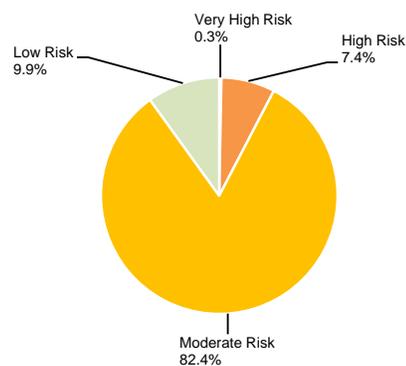
“Very high risk” industry exposures: Oil and Gas - Independent Exploration and Production.

“High risk” industry exposures: Mining - Metals and Other Materials, excluding Coal.

Source: Moody's Investors Service

Exhibit 10

Social risk scores All US CLOs rated by us



“Very high risk” industry exposures (four largest): Oil and Gas - Refining and Marketing; Oil and Gas - Independent Exploration and Production; Coal Mining and Coal Terminals; Tobacco.

“High risk” industry exposures (five largest): Chemicals - Commodity; Pharmaceuticals; Gaming and Gambling; Unregulated Utilities and Unregulated Power Companies; Construction.

Source: Moody's Investors Service

As explained in our publication [ESG – Global: Heat map: Social considerations](#), our social sector classifications are broadly based on our rating methodologies and reflect only entities we rate within a given sector. In addition, our overall sector social risk scoring scale includes scores of “very high risk”, “high risk”, “moderate risk” and “low risk”.

Collateral manager and sponsor

BIM Asset Management Pte. Ltd. (BIMAM or the collateral manager), a wholly owned subsidiary of Bayfront Infrastructure Management Pte. Ltd. (Bayfront or the sponsor), is the collateral manager of the transaction. Bayfront acquired \$20.6 million of the preference shares (greater than 5% of the aggregate par amount of assets in the initial portfolio) at closing and intends to retain these preference shares. A third party acquired the remaining \$5 million of preference shares.

Bayfront was established in Singapore in 2019, in connection with the Infrastructure Take-Out Facility initiative sponsored by the Monetary Authority of Singapore, which was designed to help mobilize institutional capital for infrastructure debt in Asia. Bayfront is 70% owned by Clifford Capital Holdings Pte. Ltd. (CCH) and 30% owned by the [Asian Infrastructure Investment Bank \(AIIB\)](#) (Aaa stable). CCH was established in March 2020 following the corporate reorganization of Clifford Capital Pte Ltd (CCPL), the collateral manager of the previous similar transaction [Bayfront Infrastructure Capital Pte. Ltd.](#), as the holding company for several operating subsidiaries, which include CCPL and Bayfront, that seek to achieve different institutional mandates under the new organization structure. Additionally, BIMAM had previously been acting as the sub-manager of the Bayfront Infrastructure Capital Pte. Ltd. transaction since April 2020 until the notes were fully redeemed in August 2022. Bayfront is also the sponsor for the previous

transactions, [Bayfront Infrastructure Capital II Pte. Ltd.](#) and [Bayfront Infrastructure Capital III Pte. Ltd.](#), which are managed by BIMAM as the collateral manager.

Bayfront focuses on acquiring predominantly brownfield project and infrastructure loans and bonds from financial institutions, warehousing and managing them with the primary objective of sponsoring future project finance CLOs. Bayfront sponsors, structures and manages such distribution issuances, and invests in the equity tranches of its securitization. BIMAM has been established and appointed by Bayfront to manage this transaction and all future issuance of project finance CLOs sponsored by Bayfront. The core personnel of CCPL who were involved in the Bayfront Infrastructure Capital Pte. Ltd. transaction have been transferred to BIMAM since April 2020. BIMAM personnel have also been managing the Bayfront Infrastructure Capital II Pte. Ltd. and Bayfront Infrastructure Capital III Pte. Ltd. transactions since their inception in June 2021 and September 2022, respectively.

The collateral manager, as an agent for the transaction, is responsible mainly for selecting the initial portfolio of assets; identifying new assets for the issuer to purchase following the receipt of unscheduled principal collections, on cancellation or expiry of the availability period in connection with undrawn loan commitments and proceeds from the sale of assets during the replenishment period; identifying credit-impaired assets, and deciding whether to sell credit-impaired and defaulted assets during the transaction life; and ensuring that the transaction is in compliance with its contractual obligations and periodic reporting, along with the transaction's trustee and transaction administrator.

The exhibit below details the key attributes of the collateral manager.

Exhibit 11

Collateral manager details

Attribute	Collateral Manager
Management Entity	BIM Asset Management Pte. Ltd
Assets Under Management	\$1.7 billion as of 31 August 2023
CLO Team	Staff span across different departments
Number of Staff	15 (excluding support functions)
Average Number of Years of Experience	About 15 years
Number of CLOs Currently Managed	2
Number of Obligors Covered by Credit Analysts	About 76 project finance loans and investments

Source: *Bayfront Infrastructure Management Pte. Ltd.*

Assets after the closing date

The portfolio is not likely to be actively traded during the entire transaction life.

The collateral manager may direct the issuer to sell defaulted assets and certain credit-impaired assets. The sale of credit-impaired assets is subject to the satisfaction of all OC and interest coverage (IC) tests (the coverage tests), and the aggregate principal amount of credit-impaired assets that are sold within six months cannot exceed 15% of the initial portfolio par amount. Any further sale of credit-impaired assets would be subject to it not resulting in a reduction or withdrawal of the then outstanding rating of each class of the rated notes.

The trading of assets at the collateral manager's discretion is not allowed.

Undrawn loan commitments

In the identified portfolio, two loans currently stand to be not fully disbursed. The undrawn loan amount aggregates to 3.2% of the portfolio size. The drawdowns are scheduled to take place by March 2024. An amount equal to the aggregate of all undrawn loan commitments is held in an account in the name of the issuer.

Upon cancellation or expiry of the availability period for each undrawn loan commitment, the collateral manager has the option to either replenish the portfolio, during the replenishment period in accordance with the replenishment criteria, or repay the senior-most outstanding class of notes.

Replenishment period

There is a three-year replenishment period in this transaction, which begins on the closing date. During the replenishment period, the collateral manager may direct the issuer to use unscheduled principal collections, on cancellation or expiry of the availability period in connection with undrawn loan commitments and proceeds from the sale of assets to purchase new assets, provided no event of default is happening, all coverage tests are satisfied and the proposed asset purchase does not result in a reduction or withdrawal of the then outstanding rating of each class of rated notes. All new purchased assets must have a public rating or a credit estimate assigned by us.

During the replenishment period, all scheduled asset collections, and if no eligible investment can be found, all unscheduled collections, upon cancellation or expiry of the availability period for each undrawn loan commitment and sale proceeds, will be used to amortize the rated notes sequentially according to the principal priority of payment. The collateral manager would have a period of 45 business days to complete the replenishment process.

Amortization period

The transaction does not permit any reinvestment or asset purchase after the replenishment period. Scheduled and unscheduled principal collections and proceeds from the sale of assets will be used to amortize the rated notes sequentially.

Asset analysis

Primary asset analysis

Modeling

Our CDOROM™ and CDOEdge™ models are the principal models that we use to rate this transaction. We apply the Monte Carlo simulation framework in CDOROM™ to model the collateral loss distribution for this transaction. The simulated defaults and recoveries for each of the Monte Carlo scenarios define the pool's loss distribution.

The country ceiling event risk is modeled in two steps in CDOROM™. In the first step, we simulate whether a country ceiling event occurs. All loans with projects domiciled in countries where country ceiling events are simulated to occur would be simulated to default in the model.

In the second step, for loans with projects in countries where country ceiling events are simulated not to occur in the first step, we simulate whether the loans default.

For loans under participation agreements, the loans would default if either the loan or the counterparty to the participation agreement is simulated to default in CDOROM™.

The identified portfolio is used in our initial rating analysis because the portfolio is likely to be fully acquired at closing and is not likely to be actively traded by the collateral manager, with no discretionary trading. Furthermore, the credit characteristics of the portfolio will be reassessed by us at the time we receive each new asset purchase proposal from the collateral manager.

We note the following portfolio characteristics of the identified portfolio.

Exhibit 12

Base-case modeling assumptions

Attribute	Metric
Portfolio Par Amount	410,308,101
WARF (after credit estimate adjustment)	1,279
Asset correlation of the portfolio	27%
WAS*	2.7%
WARR	73%

*All of the assets in the portfolio are currently linked to SOFR. The WAS over the applicable floating rate index of each respective loan is approximately 2.7% as of the expected closing date, assuming the credit adjustment spread is 26.161 basis points (for loans with quarterly payment frequency) and 42.826 basis points (for loans with semi-annual payment frequency), as published by the International Swaps and Derivatives Association on 5 March 2021.

Sources: Sole Global Coordinator and Moody's Investors Service

Comparables

Comparison with previous similar transactions

Bayfront Infrastructure Capital IV Pte. Ltd. is very similar to the previous similar transactions, with some differences in portfolio characteristics.

Exhibit 13

Comparison of characteristics with previous similar transactions

Deal	Bayfront Infrastructure Capital IV Pte. Ltd.	Bayfront Infrastructure Capital III Pte. Ltd.	Bayfront Infrastructure Capital II Pte. Ltd.	Bayfront Infrastructure Capital Pte. Ltd.
Number of loans, bonds and projects	40 loans and bonds to 33 projects	28 loans to 26 projects	27 loans to 25 projects	37 loans to 30 projects
Floating loan proportion	100.0%	100.0%	100.0%	100.0%
Portfolio Par Amount (in USD millions)	410.3	402.7	401.2	458
Covered pool proportion	22.9%	15.9%	19.5%	30.4%
Uncovered pool proportion	77.1%	84.1%	80.5%	69.6%
Top 3 sector exposure				
Largest	Power Generation Renewables - 29.7%	Power Generation Non-Renewables - 36.2%	Power Generation Non-Renewables - 36.4%	Oil, Gas and Commodities - 39.5%
Second largest	Power Generation Non-Renewables - 28.8%	Power Generation Renewables - 23.6%	Power Generation Renewables - 25.5%	Power Generation Non-Renewables - 28.4%
Third largest	Oil, Gas and Commodities - 22.3%	Oil, Gas and Commodities - 22.2%	Oil, Gas and Commodities - 22.5%	Power Generation Renewables - 13.1%
Weighted Average Rating Factor (WARF) – Before applying the credit estimate notching adjustment	1090	901	1,017	1,361
Covered pool	1,601	1,567	1,526	2,286
Uncovered pool	938	775	894	958
Weighted Average Spread (WAS) before taxes*	2.7%	2.4%	2.3%	2.5%
Weighted Average Recovery Rate (WARR)	73.2%	70.4%	74.3%	76.0%
Weighted Average Life (WAL in years)	5.7	5.6	5.9	5.4

*All of the assets in the portfolio are currently linked to SOFR. The WAS over the applicable floating rate index of each respective loan is approximately 2.7% as of the expected closing date, assuming the credit adjustment spread is 26.161 basis points (for loans with quarterly payment frequency) and 42.826 basis points (for loans with semi-annual payment frequency), as published by the International Swaps and Derivatives Association on 5 March 2021.

Sources: Bayfront Infrastructure Management Pte. Ltd. and Moody's Investors Service

Additional asset analysis

Notch-down adjustment on credit estimates

The bonds from a single project in the portfolio are rated by us. None of the loans in the identified portfolio are rated by us. We will assign a credit estimate to all assets before such assets can be included in the portfolio.

The portfolio has 40 loans and bonds across 33 projects only, and around 70% of the portfolio comprises of projects which each constitute more than 3% of the portfolio at closing. The loans related to the largest credit estimates representing up to 30% of the pool will be subject to a two-notch haircut.

This two-notch haircut adjustment is primarily to account for the unmonitored nature of credit estimates (hence, credit estimates are subject to potentially higher volatility than ratings) and also the fact that credit estimates are typically assigned based on more limited information than for ratings.

We expect to review the credit estimates as the collateral manager requests and provides updated information to us at least once every 12 months from each of the last assignment date.

External credit support

A portion of the identified portfolio benefits from external credit support such as political risk insurance or commercial risk insurance (covered loans) provided by export credit agencies, insurers or multilateral financial institutions such that the issuer (or lender of record in the case of a loan under a participation agreement) will be able to recover losses from the cover providers.

Some of the external credit support only provides a partial coverage of the loss amount, meaning the issuer or the beneficiary of such credit support will not be able to claim the full loss amount.

The covered portion of the identified portfolio is about 22.9% of the initial par amount of the portfolio.

In our analysis of credit estimates for covered loans, we take into account the terms and coverage of the credit support arrangements. We use a higher mean and lower standard deviation as the recovery assumptions of the covered portion, to reflect our view that these exposures generally have a higher recovery prospect.

Adjustment on default probability on project finance and infrastructure loans

We apply a default probability adjustment on the loans so that along with applying high recovery assumptions of the loans, the modeled expected loss would be equal to the idealized expected loss commensurate with the credit estimate of the loans.

For instance, for project finance and infrastructure loans with a mean recovery rate assumption of 75%, the default probability stress is 120%, and for project finance and infrastructure loans with a mean recovery rate assumption of 65%, the default probability stress is around 57%.

Our ratings or credit estimates of the loans address the expected loss of the loans, which quantitatively is the product of default probability and loss severity of the loan. The adjustment on the modeled default probability is to counterbalance our high mean recovery rate assumptions (that is, low severity) on the project finance and infrastructure loans such that the expected loss of the loans represented by the ratings or credit estimates will be maintained.

High project concentration

The identified portfolio only includes 40 loans and bonds relating to 33 projects, with a high exposure to a few of them. The exposure to the largest obligor group, linked operationally and through ownership, in the power generation renewables sector, comprises about 10.2% of the portfolio, greater than the subordination of the Class C and D notes. There is one other project which comprises of about 7% of the portfolio, greater than the subordination of the Class D notes. About 70% of the portfolio comprises projects each of which constitutes more than 3% of the portfolio at closing.

We correlate loans and bonds at 100% for those loans and bonds that relate to the same project or same loan guarantor so that when one of them defaults, all of them would default in the same simulation.

In our analysis, we considered several stress scenarios assuming default of the largest obligor group or higher asset correlation.

High sector concentration

The identified portfolio of loans is concentrated in certain sectors such as power generation renewables (29.7%) and non-renewables (28.8%), and oil, gas and commodities (22.3%). Credit quality deterioration in a single sector may have an outsized negative impact on the transaction. External credit support and notes' subordination are key mitigants to this risk.

We considered other stress scenarios assuming generally higher asset correlation across the entire pool or lower recovery rate assumptions for a few projects. We determined that the potential rating volatility of the notes under these stress scenarios was acceptable.

High country risk

The underlying projects are domiciled in various countries in the Asia-Pacific, Africa, Americas and Middle East regions. Most of the projects are domiciled in countries with a non-Aaa foreign-currency country ceiling assigned by us (see Exhibit 6).

Of the loan and bond portfolio, 21% portfolio exposure is to projects located in countries with speculative-grade foreign-currency country ceilings, although more than half of these projects benefit from external credit support in the form of guarantees or insurance policies.

A further 52% of the loan and bond portfolio is to projects located in countries with foreign-currency country ceilings in the single-A and Baa range.

We take the country risk into account in our quantitative analysis. External credit support and notes' subordination are key mitigants to this risk.

Moderate loan participation exposure

The issuer has acquired indirect exposures for about 34.5% of loans by entering into participation agreements with several highly rated banks that are the lenders of record of those loans, instead of purchasing them directly.

As such, the transaction is exposed to the counterparty risk of those banks, the risk that they do not comply with its covenants under the participation agreements and the operational risk of relying on them to pass on the cash flow of the loans to the transaction.

All the participation loans relate to lenders of record which are rated A1 and above. We take this counterparty risk into account in our quantitative analysis.

Long recovery period for defaulted loans

The recovery period following the default of project finance and infrastructure loans and bonds may span several years because the liquidity of the trading market in Asia may be low and the workout may take a long time. The collateral manager is not obliged to direct the issuer to sell the defaulted loans by a certain date.

In our default study research ([Default and recovery rates for project finance bank loans, 1983-2021](#)), we observed a longer recovery period for defaulted bank project finance and infrastructure loans in Asia, compared with that in North America and Western Europe. Default history in the Middle East has been limited, with only 13 defaults in the study data set; however, we do observe long recovery periods in those instances.

We expect the covered loans to receive recoveries sooner than the uncovered loans because there is a claim process in place that will facilitate orderly recoveries.

For the uncovered portion of the pool, we model that recoveries will be received three years following loan and bond defaults and assume that the recoveries will increase at an accretion rate equal to SOFR plus 1.6% per annum. This accretion rate has taken into consideration the weighted average interest margin of the identified portfolio during the transaction term. For the covered portion of the pool, we assume recoveries will be received one year following loan default.

Some projects are under construction

About 17% of the portfolio of loans relates to four projects that are still under construction. These projects are likely to be completed by March 2024. The credit estimate of these four project loans has considered construction risk.

Common off-takers or guarantors' risks

Certain underlying projects involve common off-takers or guarantors, thus increasing the asset correlation of the portfolio. We take into account this additional asset correlation in our quantitative analysis.

Withholding tax on some assets

Withholding tax applies to around 5% of the identified portfolio of the loans either because of the incorporation of the issuer or the lender of record of loans under a participation agreement. We model the net interest earnings on the identified portfolio in our quantitative analysis.

No long-dated asset and restriction of asset maturity amendment

There is no long-dated asset in the identified portfolio. The collateral manager may not consent to amendments that extend the maturity of any asset beyond the legal maturity date of the notes. In addition, the collateral manager may not consent to an asset maturity amendment for a total principal par amount of assets exceeding 10% of the initial portfolio par amount during the transaction life. These factors reduce the risk that the collateral manager would need to liquidate assets remaining at the transaction's maturity date (long-dated assets).

Collateral manager and sponsor assessment

BIMAM is capable of managing this transaction because of its experience in managing project finance and infrastructure loans in Asia-Pacific, Africa, the Americas and the Middle East. This is the fourth CLO that is being managed by BIMAM.

Bayfront is part of the broader CCH group, which enables it to leverage on group resources, expertise and domain knowledge to supplement its own staff. Bayfront has a service-level agreement with CCH Management Services Pte. Ltd., a wholly owned subsidiary of CCH, to enable this support arrangement.

Bayfront has a euro commercial paper program (rated P-1), guaranteed by the Singapore government. Despite the government guarantee, Bayfront operates its business on a commercial basis.

We had an operations review meeting with BIMAM and Bayfront in May 2023. We view their staffing, experience in the infrastructure loan market, operational systems and controls as adequate to support their CLO platform.

Securitization structure description

The issuer issued several classes of notes that receive semiannual interest payments and certain principal payments following asset scheduled payments, prepayments and sale of certain assets, in order of seniority. The transaction structure allows for the collateral manager to consider a change in payment frequency of the notes from semiannual to quarterly upon satisfaction of certain conditions.

In addition, the issuer also issued one unrated class of preference shares that receives only residual interest and principal payments.

We measure the credit risk of the notes using our CDOROM™ and CDOEdge™ models; the latter model incorporates both the transaction's structural features and asset characteristics.

This transaction is structured using a bankruptcy-remote special-purpose entity incorporated in Singapore that issues liabilities as listed in Exhibit 1.

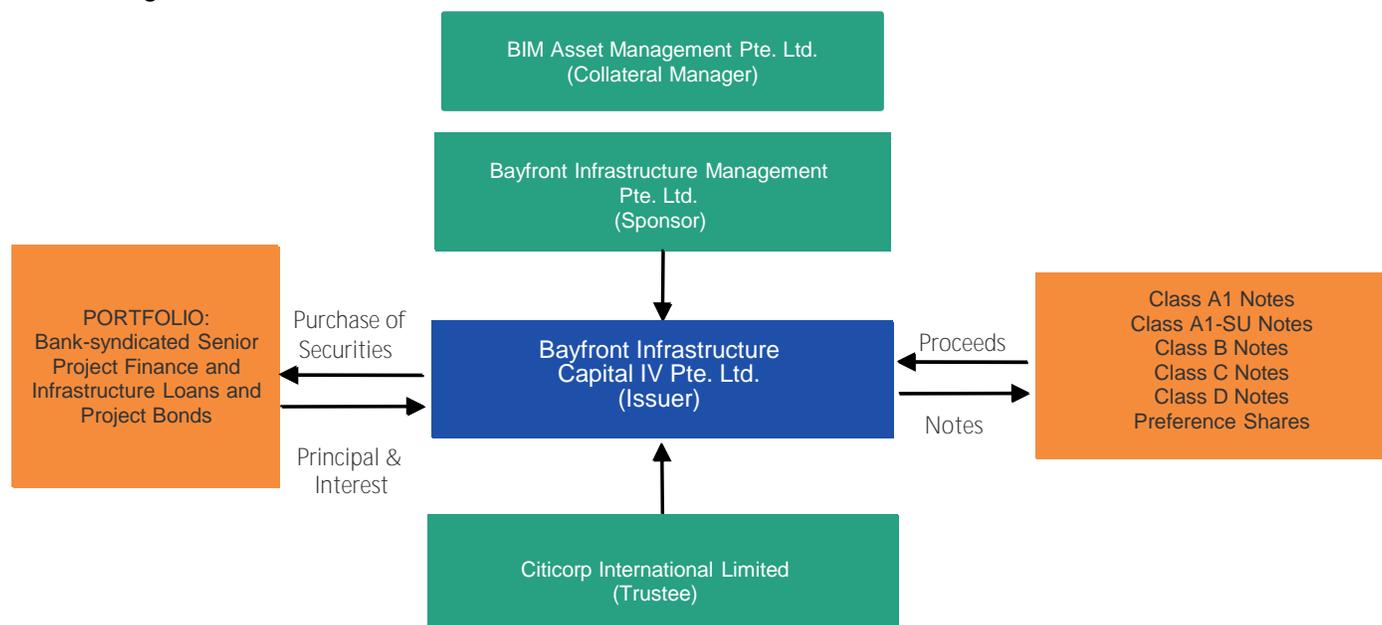
The proceeds from the issuance are invested in loans that generate cash flow from interest and principal, as we described in the "Asset description" section above. The cash flow is distributed in accordance with the transaction's priority of payments, subject to the coverage tests.

Structural diagram

The exhibit below shows the transaction's key parties and cash flow.

Exhibit 14

Structural diagram



Source: Moody's Investors Service

Detailed description of the structure

Priority of payments

This transaction's payment waterfall is consistent with that of a typical CLO. This transaction pays the notes sequentially in both the interest and principal waterfalls, although pro rata among Class A1 and A1-SU notes. Both waterfalls include coverage tests (see the "Appendices - Priority of payments" for interest and principal waterfall details).

Coverage tests

Exhibit 15

OC and IC tests

Coverage Tests	Trigger Level	Initial level
Class A/B OC Test	115.6%	120.6%
Class C OC Test	106.4%	110.4%
Class D OC Test	105.2%	106.7%
Class A/B IC Test	110.0%	n/a
Class C IC Test	102.5%	n/a

IC tests are applicable starting from the second notes' payment date.

Source: Transaction documents

OC test: OC tests, present in all CLOs, provide protection for the CLO's notes. If the OC level for a particular class or several classes of notes falls below the OC trigger for that class, the deal diverts cash flow to repay the senior-most outstanding class of notes until the breached OC ratio meets the trigger level.

Common to most CLOs, excess Caa assets are carried at the lower of their market values and our mean recovery rate assumption in the calculation of the OC ratios. Excess Caa assets are those Caa securities whose aggregate principal balance exceeds 10% of the portfolio's principal balance.

IC test: IC tests, which measure a CLO's excess interest cash flow, also provide protection for the CLO's notes. If the IC level for a particular class or several classes of notes falls below the IC trigger for that class, the deal diverts cash flow to repay the senior-most outstanding class of notes until the breached IC ratio meets the trigger level.

Security interest, bankruptcy remoteness and safeguards against involuntary bankruptcy

Security interest: With minor exceptions, the assets of the transaction are pledged to the trustee for the benefit of the noteholders. The security interest granted can provide noteholders with additional protection and a greater degree of control in cases where difficulties have developed with the transaction's structure.

Bankruptcy remoteness: The issuer is a special-purpose entity, has no prior operating history, and is established for the limited purposes of acquiring the assets, issuing the notes and performing certain related activities. The issuer is wholly owned by the sponsor, who retained \$20.6 million (around 80%) of the transaction's preference shares. However, the risk of substantive consolidation with the assets of the sponsor is low. We have also considered the appointment of at least one independent director, who is from a nationally recognized corporate services provider and owes no duty to the transaction's shareholders. Furthermore, we have taken into account the arrangement in the legal and transaction structure. Based on this, we are able to analyze this transaction as bankruptcy remote.

Safeguards against the transaction's involuntary bankruptcy: The transaction incorporates certain safeguards against the issuer's involuntary bankruptcy.

Note redemption

The issuer can effect an optional redemption of all notes in whole if the collateral manager confirms with the trustee in writing before selling the portfolio that there will be sufficient proceeds to fully redeem all of the notes, and if sufficient sales proceeds to redeem the notes are received by the issuer at least one business day before the optional redemption date. If any of these conditions are not met, the issuer will cancel the optional redemption, and such a cancellation is not an event of default of the notes.

Securitization structure analysis

Primary structural analysis

Expected loss and modeling analysis

We expect the losses on the rated notes to be consistent with our benchmark rating targets. This expectation is based on our analysis using our CDOROM™ and CDOEdge™ models.

We apply the Monte Carlo simulation framework in CDOROM™ to model the portfolio loss distribution for this transaction. The simulated defaults and recoveries for each of the Monte Carlo scenarios define the pool's loss distribution.

CDOEdge™ is a cash flow model. We input pool default and recoveries assumptions, which maintain the pool loss distribution generated from CDOROM™, and also other modeling assumptions such as recovery delay, portfolio amortization schedule and yield vector to the model, to estimate the expected losses of each class of notes.

The CDOEdge™ model incorporates various scenarios for default timing and interest rate paths, and allocates the cash flow arising from the portfolio in accordance with the transaction's documentation.

We fully describe our approach to modeling and rating this transaction in [Moody's Global Approach to Rating Collateralized Loan Obligations](#) and Project Finance and Infrastructure Asset CLOs Methodology.

Additional structural analysis

OC analysis

Remote likelihood of an OC-based event of default: We view the occurrence of an OC-based event of default and the associated liquidation of the portfolio as unlikely. The event of default par ratio trigger is set at 102.5%, below the initial level of 143.7%. The calculation, which is based on the ratio of the portfolio's par amount to the outstanding principal amount of the Class A1 and A1-SU notes, incorporates haircuts for defaulted assets, but not for Caa or deep-discount assets. The portfolio's par amount includes, without duplication, amounts on deposit in the issuer's principal account and principal fixed deposit account. Portfolio liquidation following an event of default based on breach of the trigger requires consent from either a supermajority of the controlling class or a supermajority of each class of notes, voting separately.

No currency mismatch risk

No currency mismatch: Since the target closing portfolio and the notes are denominated in US dollars, there is no currency mismatch risk in this transaction at closing.

Limited basis risk

Limited basis risk: Because the issuer will issue only six-month SOFR-linked interest rate notes and the target closing portfolio only contains either three-month or six-month SOFR-linked loans, there are limited interest rate mismatches between the interest cash flow on the assets and liabilities at closing.

Additionally, with the use of Compounded Overnight SOFR as the base rate for the notes and the manner in which it is computed in arrears, together with 75.1% of the initial target portfolio linked to daily compounded overnight SOFR, this further mitigates any interest rate mismatches between the interest cash flow on the assets and liabilities throughout the life of the transaction.

Note redemption and cancellation analysis

Note redemption: The issuer can effect an optional redemption of the notes, which relies on the collateral manager's certification that there will be sufficient proceeds to fully redeem all of the notes.

Although many other CLOs apply haircuts to the assets' market values when determining the sufficiency of such proceeds, thereby providing a buffer against market value declines, this transaction does not incorporate such haircuts. Therefore, the transaction could face a situation in which there are insufficient liquidation proceeds to redeem the notes in full if a large decline in asset prices occurs during the redemption process.

A mitigant to these risks is the fact that the issuer can cancel the optional redemption, and such a cancellation does not constitute an event of default under the terms of the transaction.

Note cancellation: No notes may be surrendered in this transaction.

ESG - Governance considerations

This transaction's governance risk is low and is typical of other CLOs in the market. As described in our publication [Governance considerations are a key determinant of credit quality for all issuers](#), we examine five governance considerations in our analysis: financial strategy and risk management; management credibility and track record; organizational structure; board structure, policies and procedures; and compliance and reporting. The transaction's structure, documentation and characteristics of the transaction parties, as described below, mitigate governance risks.

1. Financial strategy and risk management – The transaction limits the issuer's permitted activities as described in the "Securitization structure description - Detailed description of the structure - Bankruptcy remoteness" section above.
2. Collateral manager's credibility and track record – Collateral manager characteristics are described in the "Asset analysis - Additional asset analysis - Collateral manager and sponsor assessment" section above.
3. Organizational/transaction structure – The issuer is structured as a bankruptcy-remote special-purpose entity and includes an alignment of interests among the transaction parties, as detailed in the "Securitization structure description - Detailed description of the structure - Security interest, bankruptcy remoteness and safeguards against involuntary bankruptcy" section above.
4. Board structure, policies and procedures – The issuer has an independent director. In addition, the transaction has an independent trustee and collateral administrator, as outlined in the first paragraph of the "Securitization structure description" section above.
5. Compliance and reporting – The transaction's consistency and quality of financial reporting in the form of quarterly investor reports is described in the "Asset description - Asset acquisition guidelines - Collateral manager and sponsor" section above.

Legal structure analysis

Safeguards against the issuer's bankruptcy: The transaction includes provisions that we view as helpful to protect it against bankruptcy.

Methodology and monitoring

Rating methodologies

[Project Finance and Infrastructure Asset CLOs Methodology](#)

To access this report, click on the link above. Note that this reference is current as of the date of publication of this report and that a more recent report may be available. All research may not be available to all clients.

Monitoring

We will monitor the ratings on an ongoing basis. We will announce and disseminate any subsequent changes in the ratings on www.moodys.com.

Appendices

Modeling scenarios

Apart from considering the characteristics of the identified portfolio in determining our base-case modeling assumptions, we considered the following additional sensitivity analysis:

1. Change the credit estimate of the most significant loan exposures that relate to the same group of companies or projects to Caa2.
2. Change the credit estimate of the second most significant loan exposures that relate to the same group of companies or projects to Caa2.
3. Increase the base-case asset correlation by 10%.
4. Increase correlations for all power-electricity projects to 60% and all oil and LNG projects to 60%.
5. Adjust the credit estimates of the loans in the power generation (non-renewables), and oil and gas sectors down by one notch.

Priority of payments

Application of interest proceeds

1. Taxes and fees
2. Trustee fees and expenses, subject to a cap
3. Administrative expenses, subject to a cap
4. Top-up fee reserve account, subject to a cap
5. Collateral manager base fees
6. Pari passu and ratably:
 - a. Class A1 note interest
 - b. Class A1-SU note interest
 - c. Amount payable to hedge counterparties
7. Interest on Class B
8. Class A/B coverage tests
9. Interest on Class C
10. Class C coverage tests
11. Deferred interest on Class C
12. Interest on Class D
13. Class D coverage tests
14. Deferred interest on Class D
15. Collateral manager subordinated fees
16. Remaining trustee fees and expenses
17. Remaining administrative expenses
18. Deferred collateral manager fees
19. Remaining amount due to hedge counterparties
20. Residual to the preference share holders

Application of principal proceeds

1. Steps 1 through 7 of the interest waterfall if not fully paid
2. Class A/B coverage tests
3. Interest on Class C if Class C is the controlling class of notes
4. Class C coverage tests
5. Deferred interest on Class C if Class C is the controlling class of notes
6. Interest on Class D if Class D is the controlling class of notes

7. Class D coverage tests
8. Deferred interest on D if Class D is the controlling class of notes
9. On a redemption date or a special redemption date, make payments on the notes in accordance with the notes' principal payment sequence
10. During the replenishment period, to reinvest in additional assets, subject to the satisfaction of replenishment criteria, or to the principal account of the issuer pending for reinvestment at the discretion of the collateral manager
11. Make payments on the notes in accordance with the principal payment sequence
12. Steps 15 through 19 of the interest waterfall if not fully paid
13. Residual to the preference share holders

*See [Moody's Clarifies Policy for the issuance of RACs](#) (January 2012), which makes clear that the provision of a rating agency confirmation (RAC) remains entirely within our discretion, and it may be that we will not provide a RAC even if the transaction documents, to which we are not a party, require it.

Sources used in this report

The sources we used in preparation of this report include:

- » Moody's Investors Service
- » Information from the Joint Global Coordinators
- » Information from the collateral manager
- » CLO's legal documents

Moody's related publications

- » [Moody's ESG Impact page](#)
- » [General Principles for Assessing Environmental, Social and Governance Risks Methodology](#), 19 October 2021
- » [Project Finance and Infrastructure Asset CLOs Methodology](#), 9 November 2021
- » [Global Approach to the Use of Credit Estimates](#), 1 March 2023
- » [Bayfront Infrastructure Capital III Pte. Ltd.](#), 23 September 2022
- » [Bayfront Infrastructure Capital II Pte. Ltd.](#), 18 June 2021
- » [Bayfront Infrastructure Capital Pte. Ltd.](#), 31 July 2018
- » [Moody's upgrades rating on Class C Notes issued by Bayfront Infrastructure Capital Pte. Ltd. and updates the approach for determining the inputs to WARF calculation](#), 18 March 2022
- » [Moody's upgrades rating on Class D Notes issued by Bayfront Infrastructure Capital II Pte. Ltd. and updates the approach for determining the inputs to WARF calculation](#), 18 March 2022
- » [Moody's upgrades rating on Class C Notes issued by Bayfront Infrastructure Capital III Pte. Ltd.](#), 17 August 2023

To access these reports, click on the links above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

Endnotes

- 1 See [ESG – Global: Environmental risk heat map: Updates to risk assessments for certain sectors](#), 10 June 2022, which describes our overall sector environmental risk scoring of "very high risk", "high risk", "moderate risk" and "low risk".
- 2 See [ESG – Global: Social risk heat map: Updates to risk assessments for certain sectors](#), 10 June 2022, which describes our overall sector social risk scoring of "very high risk", "high risk", "moderate risk" and "low risk".

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EMEA	44-20-7772-5454