Brookfield Infrastructure Partners: Consequences of a Toxic Financial Structure

April 16, 2024

He is led by an invisible hand to promote an end which was no part of his intention

Adam Smith

BIP's financial structure incentivizes its manager, Brookfield Asset Management, to pursue fee maximization practices. On first view, drivers of fees - a higher unit price and higher distributions to limited partners - may seem to align the interests of the managers and owners. However, the unintended consequence of BIP's success is that financial policies have become toxic for limited partners. Units have been transformed into a variation of a pyramid scheme, where the profits of the underlying investments alone cannot pay the bloated fee structure and expected investor returns. Comparing BIP with a sister entity that was launched in 2023 by Brookfield illuminates BIP's fatal flaws clearly.

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Negative Space

The seeds of BIP's collapse are embedded in its success as an investment vehicle. The unintended consequences of its fee maximizing incentive structure is that BIP has been transformed into a variation of a pyramid scheme.

Years of overpayment of distributions has driven units to trade at a multiple of NAV. Both contribute to the bloated expense structure. 20% cash expenses, but only 12-15% expected returns means that erosion is inevitable.

Equilibrium will not come easily. There are three options. BIP can continue as it has done by funding eroding equity by selling units at above NAV; management must generate returns on equity of greater than 22.5% to prevent NAV erosion, or the expense structure must be rationalized.

Relying on selling equity above NAV is a risky approach, in my view. It relies on finding new investors willing to pay $2 for $1 worth of businesses. I don't think it is not a sustainable long-term strategy. Likewise, I don't think BIP can generate the returns necessary to prevent equity erosion with the current expense structure. **Therefore, management and incentive fees must be cut, which cannot happen without a lower unit multiple and distribution cuts, implying significant investor losses.**

Management deftly avoids discussion of limited partner equity or net asset value. In some kind of suspension of disbelief, investors have not questioned management on value creation, instead focusing attention on management's chosen metrics. However, equity matters. Without equity, there is no return. Without equity there is no partnership.

2023 has provided additional context in which to examine BIP. BIP unitholders seeded a related-party entity, Brookfield Infrastructure Income Fund (BIIF), with investments in return for shares. BIIF is an untraded fund that trades at NAV with NAV-based management and income-based incentive fees.

Comparing the two entities has grim implications for BIP unitholders. BIIF has a substantially similar portfolio, yet trades at a greater than 50% discount and pays a fraction of the fees. Both vehicles own investments purported to generate 12-15% annual returns. Doubtless, investors in both vehicles expect the returns. Yet, returns cannot be equal when BIP unitholders purchase the portfolio for over 2x the cost and pay ~2.5x the base management fees.

BIP's high expense structure means that net returns must be significantly lower than BIIF's, begging the question of how BIP can continue to exist with its current financial structure?

While management declared 2023 "another marquee year" with respectable FFO growth, data from the 20-F shows actual cash flow from operations at many key assets have declined in the last two-years. Though continuous acquisitions and scant disclosure obscure the erosion, but evidence remains.

I estimate the annual FFO overstates LP cash flow by at least 20%, inflated by accounting gimmickry and by including cash flows from companies that are not in the financial position to pay distributions. BIP cannot pay distributions based on IPL cash flows when IPL cannot pay distributions to BIP.

Japanese art aficionados know that "ma" or negative space is just as intentional and important as the object depicted in a painting. Brookfield investors should be aware that the "ma" of BIP financials – what management does not talk about, does not disclose and ceases to disclose is at least and often more important than the metrics in focus.

I continue to be short BIP.

I. The Inevitable Outcome of a Pyramid Scheme is Collapse

BIP is a publicly traded pyramid scheme. The long-term overpayment of distributions has helped drive a 2.3x NAV valuation, which contributes to the bloated and unsustainable fee structure. Fees consumed 7.9% of NAV in 2023. The underlying investments cannot generate the level of returns necessary to pay the excessive fee burden and promised distributions to unitholders. **Positive long-term returns from current unit prices can only be generated by recruiting buyers at ever higher valuations.**

The math of maintaining or growing NAV is irreconcilable with realistic return expectations. Here's how it works.

The table below shows changes in unitholder net asset value in the context of BIP's 2023 cash expense structure. It also shows the required rate of return needed to maintain a flat NAV.

Required Rate of Return

($ millions, except %)	**2023**	**Plug**
Beginning net assets	5,372	5,372
Retun on net assets	***21.5%***	***22.5%***
Return on Assets	1,157	1,208
Management fees	(282)	(282)
Incentive distributions	(187)	(187)
Distributions	(739)	(739)
Ending net assets	5,321	5,372

Source: Company financials and estimates.

In 2023, unitholder net asset value declined by -0.95%. The gross return on net assets is a plug figure obtained by using the reported ending net assets and the partnership's expense structure. In the year, BIP generated gross returns of 21.5%.

The column on the right shows the required rate of return to prevent NAV erosion with the current expense structure. **The minimum required return on net assets is 22.5%.**

Utility and utility-like investments that generate a consistent 22.5% annual return do not exist, in my opinion.

Long-term return for utilities are between 8% and 10%, according to Morningstar and Pitchbook. Management states that it can generate 12-15% average annual returns – 50% higher than industry averages at the midpoint of 13.5%.

If we assume management generates the 13.5% expected rate of return minus 7.9% of management fees leaves an **expected net return to investors of a meagre 5.6%.**

If we assume management achieves the return goals, the outlook for unitholder NAV is grim.

Inevitable NAV Erosion						
($ millions, except %)	**2023**	**1**	**2**	**3**	**4**	**5**
Beginning net assets	7,707	7,645	7,027	6,248	5,286	4,113
Retun on net assets	*20.0%*	*13.5%*	*13.5%*	*13.5%*	*13.5%*	*13.5%*
Return on Assets	1,542	1,032	949	844	714	555
Management fees	(338)	(297)	(279)	(256)	(229)	(195)
Incentive distributions	(266)	(285)	(305)	(326)	(349)	(373)
Distributions	(999)	(1,069)	(1,144)	(1,224)	(1,309)	(1,401)
Ending net assets	7,646	7,027	6,248	5,286	4,113	2,699
NAV/unit	$11.67	$10.72	$9.54	$8.07	$6.28	$4.12
Annual change in NAV/unit		***-8.1%***	***-11.1%***	***-15.4%***	***-22.2%***	***-34.4%***
Total annual return		***5.9%***	***5.2%***	***4.2%***	***2.6%***	***-0.3%***
Cumulative change in NAV/unit		***-8.1%***	***-18.3%***	***-30.9%***	***-46.2%***	***-64.7%***
Expense Structure						
Total fees	7.8%	7.6%	8.3%	9.3%	10.9%	13.8%
Distributions	13.0%	14.0%	16.3%	19.6%	24.8%	34.1%
Total cash expenses	20.8%	21.6%	24.6%	28.9%	35.7%	47.9%

Source: Company financials and estimates.

The expense structure assumes the unit market multiple remains the same, and both distributions and incentive distributions paid to BAM grow at 7%, which is the midpoint of management's guidance. With this cash expense structure, if management achieves the midpoint of stated return expectations of 13.5% and the current cash expense structure, **unitholder NAV declines at an accelerating rate over time, beginning to collapse in year-3**.

Connecting fees to unit price and LP distributions has resulted in a toxic financial structure that consumes equity and imparts immense risks on BIP unitholders. It is evident if one assumes a year of negative returns, as shown below.

High-risk Financal Model			
($ millions, except %)	**2023**	**Base**	**Downside**
Beginning net assets	7,707	7,645	7,645
Retun on net assets	*20.0%*	*13.5%*	*-10.0%*
Return on Assets	1,542	1,032	(765)
Management fees	(338)	(325)	(325)
Incentive distributions	(266)	(285)	(285)
Distributions	(999)	(1,069)	(1,144)
Ending net assets	7,646	6,998	5,127
NAV/unit	$11.67	$10.68	$7.82
Annual change in NAV/unit		***-8.5%***	***-32.9%***
Total annual return		***5.5%***	***-18.0%***

Source: Company financials and estimates.

If BIP's investments ever experience a relatively modest down-year of -10%, unitholder NAV will plunge over 30%.

I assume investors at current levels have bought into management's "Grow-tility" narrative of safe stable yield and growth. **There is an implied free lunch in the conservative safety plus growth set-up, but the free lunch goes to management**, which can currently sell equity worth $1 for $2.55. In my view, are holding a ticking financial time bomb.

Management is stuck between a rock and a hard place. On the one hand, they must know that the expense structure is untenable and it implies the inevitable destruction of unitholder NAV. On the other hand, avoiding all discussion of NAV, obscuring the financial model with smoke and mirrors financial presentations, and inveigling investors with narrative of safe high-yield and growth has worked well thus far, allowing them to fund the model by selling equity above NAV. The problem is that it is a faith-based model. Investors must believe that the unit price can increase irrespective of a stagnant or declining NAV, and somehow shoulder the enormous fee burden resulting from that increase. **That is not a tenable strategy, in my view.**

Outside the free lunch, there are only two ways this can return to equilibrium.

1. Management must generate returns equal to or greater than 22.5% annually to avoid NAV erosion.
2. Unit devaluation and cuts in LP distributions and incentive distributions must combine such that the total cash expense ratio is less than or equal to management's expected returns of 13.5% annually.

BIP's investments will almost certainly generate average annual returns of 22.5%. That means the financial model is **dependent on selling units above NAV to generate equity** to avoid a collapse in equity, which I do not view as a sustainable strategy. **Eventually and inevitably, in my view, expenses must be right-sized, which has catastrophic return implications for current holders.**

II. Brookfield Infrastructure Income Fund Exposes BIP's Fatal Flaws

Late in 2022, BIP unitholders sold a portfolio of investments in a related-party transaction to a seed a new investment vehicle started by BAM. Brookfield Infrastructure Income Fund (BIIF) is a non-traded investment company that trades at NAV. Its portfolio contains many of the same assets held by BIP. However, The two vehicles have very different financial profiles. **BIIF trades at more than a 50% discount to BIP and pays BAM a fraction of the management fees.**

IFRS Book Value is NAV

When my initial report was published, I received some pushback on the concept of BIP book value being NAV. Some investors maintain that BIP's IFRS values do not represent carrying values, therefore book value is not NAV. This is patently false.

Management doesn't talk about NAV, but that should be no surprise – doing so would essentially be telling investors that they overpaid and own units at vastly inflated prices. However, the fact is clearly evident elsewhere.

Management has spoken/boasted of selling assets at or above carrying values numerous times, including BN's 4Q23 earnings release:

Brookfield Corporation Carrying Values

- During the year, we monetized over $30 billion of assets—substantially all transacting at values higher than our IFRS carrying values, validating the carrying values of our investments.

Source: BN company press release.

IFRS value as carrying value is also evident in a related-party transaction used to seed BIIF which was effected at the end of 2022, disclosed below.

BIP's Related-party Asset Sale

During the fourth quarter of 2022, our partnership sold a portfolio of investments, which included partial interests in consolidated subsidiaries and financial assets, with an approximate fair value of $310 million to an affiliate of Brookfield in exchange for securities of equal value. The portfolio of investments represented seed assets in a new product offering that Brookfield will be marketing and selling to third party investors which at that time will allow our partnership, subject to certain conditions, monetize the securities to generate liquidity. The securities are recorded as financial assets on the Consolidated Statement of Financial Position. The reduction in partial interests in consolidated subsidiaries is reflected as an increase in non-controlling interest of others in operating subsidiaries on the Consolidated Statement of Financial Position. Subsequent to year end, on February 28, 2023, our partnership exercised its redemption option associated with the securities and redeemed a portion of its units with a fair value of $230 million.

Source: BIP 2022 20-F.

BIP sold assets to Brookfield Infrastructure Income Fund (BIIF), a non-trade investment company. The assets were transferred at fair value; BIP received shares in the entity as payment.

IPL Valuation

($ millions)	**BIP**	**BIIF**
Stake	56%	3%
Carrying value	3,264	174
Total value	5,829	5,800

Source: Company financials and estimates.

It is also evident in position carrying values. As shown in the accompanying table, IPL is carried at the same fair value at both BIP and BIIF.

BIIF raises some uncomfortable questions for BIP unitholders. Comparing BIP with BIIF leads to the inevitable conclusion that BIP unitholders own an asset with toxic financial policies where returns cannot approximate those expected.

We can compare BIP and BIIF on several levels. First and foremost, investors should keep in mind when comparing financial metrics that the two entities contain very similar portfolios, though as shown in the exhibits at the Appendix, they are presented in a very different manner. This is important, because the difference in the way in which the portfolio and returns are presented is a key driver of the BIP trading price anomaly that drives the outrageous fees.

While the portfolios are substantially similar, the price investors pay for the portfolio and fees are quite different. The exhibit below details the basics of the fee structures for each vehicle.

BIP's Fee Structure: Encourage Unit Price Inflation and Overpayment of Distributions

	BIP	**BIIF**
Policy		
Management fee	1.25% of market value of the partnership, market capitalization plus recourse debt and securities.	1.25% of net asset value.
Incentive fees	An escallating distribtuion to the manager based on distributions to limited partners.	12.5% of fund income, where income is based on distributions received from investments minus fund expenses.
Impact		
Management fee	Management fee **NOT LINKED** to value creation.	Management fee **LINKED** to value creation.
Incentive fees	Incentive distribution has **NO LINK** to income.	Incentive fee **DRIVEN** by fund income.

Source: Company reports and estimates.

In contrast to BIIF, neither BIP's management fee nor its incentive distribution are linked to profit or cash flow generated by the assets. Fees are driven by capital market and securities metrics.

BIIF is a non-traded investment vehicle and trades at NAV, whereas buyers of BIP pay the market-price, which over time has become decoupled from the NAV as investors have been encouraged to view distributions as the sole measure of value. **This difference has profound financial implications for BIP unitholders, as shown below.**

Investment Cost and Fees
IPL Comparison

($ millions)	**BIIF**	**BIP**	**Difference**
Net assets	130	130	
Purchase price	NAV	Market	
Multiple	1.0x	2.3x	
Price	***130***	***292***	***125%***
Fee rate	1.25%	4.42%	
Management fee	***1.62***	***5.74***	***254%***

Source: Company filings and estimates. BIP's fee based on the average rate from 2023.

The exhibit takes the value of IPL as reported by BIIF and adjusts it for its proportion of liabilities to obtain the net value. I then show how much a shareholder is paying for the asset at both investment vehicles and how much they are paying in base management fees on the asset.

BIP unitholders pay a higher price for the portfolio and a multiple of fees relative to BIIF.

The difference in expense structures has profound implications for expected returns. Brookfield expects their infrastructure investments to generate 12-15%, or an average of 13.5%, annual returns over the long-term. Putting management's expected returns together with actual expense ratios yields the average expected net return to investors.

Net Expected Investment Returns

	BIP	**BIIF**
Average return	***13.50%***	***13.50%***
Management fee	4.42%	1.25%
Incentive fee	3.48%	0.63%
OpEx	0.49%	0.78%
Expense ratio	***8.39%***	***2.66%***
Net expected return	***5.11%***	***10.84%***

Source: BIIF fund fact sheet and BIP 20-F for expected returns and estimate of $37M or 0.49% of NAV OpEx.

Management return expectations and BIIF's 2.66% expense ratio results in a net expected return of 10.84% to shareholders. **BIP's 8.39% current expense ratio reduces expected returns to a mere 5.11%.** BIP's return assumes no change in the trading multiple.

Investors in both vehicles likely have the same return expectations, but that cannot be. BIP unitholders need to digest the fact that the majority of expected investment returns are consumed by fees.

Unitholder expected net return of 5.11% is less than 50% of BIIF's and a mere 59 basis points above the risk-free rate, U.S. 10-year treasury of 4.518% (as of 4/12/24).

Here we have two Brookfield-managed investment vehicles with substantially similar portfolios. Investors can buy one vehicle for $1 with an expected annual return of ~11% or could buy the other for $2.55 with an expected return of 5.11%, with the embedded risk of a ~60% decline as price reverts to NAV.

III. Continuous M&A Activity Hides Eroding Cash flows

BIP's "cash flow" as defined by management's FFO metric, increased 9.6% in 2023. Although down from the 20.4% growth in 2022, still quite respectable. Analysis of the sources of cash flow, however, shows that growth is driven by adding assets. Most traceable assets have experienced cash flow erosion.

The table below shows the cash flow on a "same store" basis for investments that BIP that have been reporting for 3-years or have not changed materially. I eliminated newer investments and those, such as the Indian Telecom Towers, which had a material acquisition. Unfortunately, analysis is limited, in part, because management eliminated the disclosures that with the data necessary to perform this analysis with equity accounted investments.

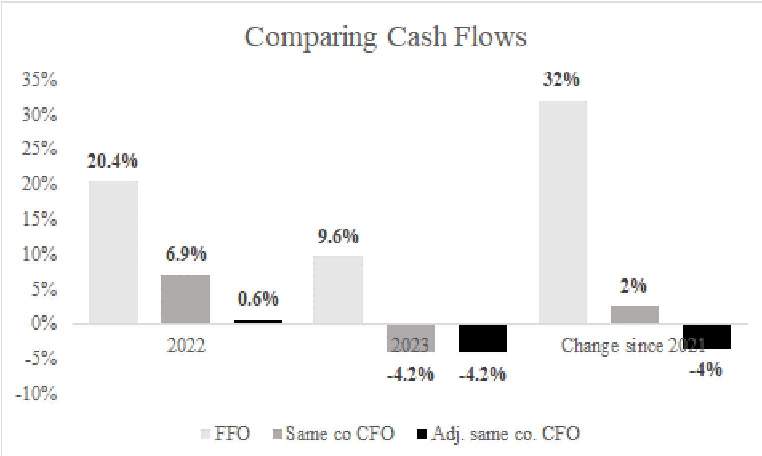
"Same Store" Cash Flow From Operations

($ millions)				**Change**
Utilities	**2021**	**2022**	**2023**	**From '21**
U.K. regulated distribution operation	273	293	226	-17%
Brazilian regulated gas transmission operation	768	783	739	-4%
Colombian natural gas distribution operation	91	154	89	-2%
Indian gas transmission	187	132	134	-28%
Transport				
North American rail operation	511	515	528	3%
U.K. ports operation	66	31	16	-76%
Australian port operation	11	26	6	-45%
Peruvian toll roads	30	42	24	-20%
Midstream				
Canadian diversified midstream	198	568	542	174%
North American gas storage operation	196	61	219	12%
Western Canadian natural gas gathering and processing operat	235	197	170	-28%
Data				
North American data center	38	(5)	(13)	-134%
Australian data center operation	16	5	5	-69%
Total	***2,620***	***2,802***	***2,685***	2%
IPL Adjustment	165			
Total	***2,785***	***2,802***	***2,685***	-4%

Source: Company financials and estimates.

10 of 13 assets have declining cash flows over the 2-year period. Aggregate growth as reported over the period was only $65M and that only because Canadian diversified midstream, Inter Pipeline (IPL) was acquired in 3Q21. The proper way to view the change is cash flows is on a full-year basis at the business level. I adjust IPL's 2021 cash flows to include the full-year, though BIP did not own it the entire year. **Doing so increases the 2021 proforma cash flows by $165M, which makes the 2-year change ($100M) or -4%. Viewed on a true comparative basis, BIP's consolidated business have seen an erosion of cash flows over the last 2-years.**

The chart below compares the different measures of cash flow – BIP's reported FFO, the "same store" cash flow from operations, and "same store" including a full allocation of IPL's 2021 cash flows.



FFO shows a 32% increase in "cash flow" over the period. In contrast, adjusting the same-store numbers on trackable assets for a full allocation of IPL cash flows shows a -4% decline.

As far as I can measure, cash flows at most of BIP's consolidated investments have declined on a same-store basis over the last 2-years, despite growth CapEx investments. Investors would do well to keep this performance in mind the next time management talks about BIP's "inflation protected cash flows". Inflation protected does not mean they go up.

The 30% differential between the 31% reported 2-year FFO growth and 2% on a trackable business basis, is likely M&A. It is not mysterious why BIP engages in serial acquisitions. Buying creates the illusion of growth and masks cash flow declines.

IV. Does BIP Have a Conservative Payout Ratio?

BIP reported comfortable FFO-based payout ratio of 66% in 2023, down from 68% in the prior year. The AFFO payout ratio, that is the payout after maintenance CapEx, declined marginally to 82% from 83% the prior year.

As I detailed in my initial report, FFO is a proportional metric that includes BIP's proportion of FFO from both consolidated and equity accounted investments. The aggregate figures are used to measure payout irrespective of how much cash BIP actually collects in distributions from its investments.

BIP's definition of FFO inflates cash flow available for distribution. It includes cash it does does not receive for a variety of reasons, including the lack of free cash and accounting gimmicks.

To illustrate the impact on 2023, I make two clear and simple adjustments to BIP's numbers. One is for IPL, which cannot pay distributions due to excess leverage. (Some of the investment is debt, which are recorded as distributions. This cash is included in my estimates.) The second is BUUK, which has a revenue recognition policy that dramatically inflates FFO.

In the table below, I show BIP's payout on an as reported and as adjusted for the two items above. Further below, I detail the financial performance of each company and discuss how and why I made the adjustments.

FFO Payout Charade

($ millions	2023	Adjustments	Adjusted 2023
FFO	2,288	(445)	1,843
Payout	**66%**		**81%**
AFFO	1,838	(445)	1,393
Payout	**82%**		**108%**

Source: Company filings and estimates.

With just two adjustments, BIP's conservative payout profile crumbles. FFO increases to 81% from 66% and the AFFO payout increases to 108% from 82%.

In 2023, adjusting for the inflationary impact at two investments reduced FFO and AFFO by -19.4% and -24.2%, respectively.

FFO Adjustments – the Technicalities

The tables below detail how I arrived at the adjustments. IPL's financial statements show the company made no distributions in 2023. However, part of Brookfield's position is structured as interest bearing debt. I assume BIP received its proportion of the cash interest payments.

BIP management includes customer contributions for construction as revenues at BUUK. As such, it generates ~100% margin FFO despite the fact that it is a CapEx contribution, not free cash that can be used for distributions. **In my view, it is a deeply deceptive and inflationary practice**. I remove the CapEx contributions from FFO.

I attempted to engage BIP in a discussion regarding BUUK's revenue recognition practice and its impact on BIP's financials. Repeated email queries were unanswered.

IPL simply cannot afford to upstream BIP's proportion of FFO.

In the table below, I show estimates of BIP's proportion of FFO from IPL compared with the actual payout; and BIP's accounting calculation of BUUK's FFO and compared to the real, economic value of FFO.

Mechanisms for Inflating Payout

IPL: FFO vs Reality			**BUUK: Accounting and Economic FFO**		
(millions)	**2023**	**Actual Payout**		**2023**	**Economic FFO**
FFO	756	164	FFO	285	85
FX	0.7411	0.7411	FX	1.2439	1.2439
USD	560	121	USD	354	105
Stake	56%	56%	Stake	80%	80%
BIP Share	314	68	BIP Share	283	84
Difference	***(246)***		***Difference***	***(199)***	

Total Adjustments	**(445)**

Source: Company filings and estimates.

My calculations show that BIP recorded ~$314M in FFO from IPL, which would underpin $207M of distributions, but the partnership only received $68M in cash. In BUUK's case, 70.3% of FFO is the financial equivalent to vaporware. I believe these inflationary, financial games of deceptive metrics used to justify an unsupported distribution payout inveigle investors into buying the implied free lunch of safe yield and growth, resulting in a unit price that exceeds any measure of intrinsic value.

This is, in part, how BIP as an investment fund was transformed into a pyramid scheme.

V. Company Performance and Valuation: What Management Will Never Tell Investors

In effort to counter management's "marquee year" narrative with a dose of reality, I'm providing a short review of BUUK and IPL's 2023 performance. **BUUK and IPL were 36.5% and 13.75 of net assets, respectively, for a total of 45.2% of NAV.**

BUUK Infrastructure: Still Inflating Cash Flows

In my original BIP report, I detailed how BUUK's cash flow is inflated with a highly unusual revenue recognition method. BUUK's P&L has two key revenue lines: distribution, which is pipeline revenue, and connections, which is how the company classifies CapEx contributions made by customers. In reality, the CapEx contributions are an offset for the costs BUUK incurs in constructing the electricity/gas connections.

The table below shows revenue for the last 2-years.

BUUK: Revenue Composition

	2022	2023	Change
Distribution	372	397	7%
Connections	171	200	17%
Core revenues	543	597	10%
Other	29	38	31%
Total	572	635	11%

Source: BIPC/BIP documents and estimates.

Overall revenue grew by 10%, but zero-margin connections revenue was the larger driver with 17% growth. I estimated EBITDA and FFO using both as reported or accounting numbers, and adjusted numbers I call economic. I estimated cost of sales, OpEx and the financial expenses.

The table below shows valuation and leverage metrics on an accounting and economic basis.

BUUK: Accounting for Accounting

Accounting Metrics	**2022**	**2023**	***Economic Metrics***	**2022**	**2023**
EBITDA	322	365	EBITDA	151	165
FFO	245	285	FFO	74	85
Valuation	**2022**	**2023**	**Valuation**	**2022**	**2023**
Enterprise value	3,825	4,755	Enterprise value	3,825	4,755
EV/EBITDA	**11.87x**	**13.05x**	**EV/EBITDA**	**25.29x**	**28.91x**
Leverage	**2022**	**2023**	**Leverage**	**2022**	**2023**
Debt/EBITDA	**7.12x**	**8.22x**	**Debt/EBITDA**	**15.17x**	**18.21x**
FFO/Debt	10.7%	9.5%	FFO/Debt	3.2%	2.8%
Enterprise Value	**2022**	**2023**	**Enterprise Value**	**2022**	**2023**
Equity	1,531	1,760	Equity	1,531	1,760
Debt	2,294	2,995	Debt	2,294	2,995
EV	3,825	4,755	EV	3,825	4,755

Source: Company documents and estimates. Cost of sales and OpExestimated based on 2022 actuals; finance cost on increased debt and MD&A.

Connections revenue cannot support distributions; it is a CapEx contribution. Removing it brings FFO down -70% to $85M from the reported $285M. The removal of connections revenue drives valuation and leverage to sky-high levels. The EV/EBITDA goes from a market 13.05x to 28.91x, a valuation that to my knowledge has never been seen in third-party transactions. Leverage shifts from a very high 8.2x to an extreme 18.21x.

I said it in my original report and I will say it again: BUUK is a zero.

Inter Pipeline (IPL): Years of Underperformance

IPL is BIP's largest consolidated equity position and the largest consolidated contributor to proportional cash flow from operations, and likely FFO as well. **2023 was another year of disappointing results for IPL**. Heartland, the company's petrochemical complex, has been more difficult to bring operational than anticipated. Underperformance at Heartland has led to missed estimates and very high leverage.

The table below shows rolling historical EBITDA estimates for Heartland vs actuals.

Heartland: Rolling EBITDA Guidance vs Actual

(C$ millions)	**2022**	**2023**
Apr-21	283	425
Aug-21	-	425
1Q23	-	-
Actual	(55.2)	41.2

Source: Company documents and estimates

When Brookfield was negotiating the purchase of IPL in 2021, Heartland was scheduled to produce a total of $708M in EBITDA for 2022 and 2023. As the table shows, the guidance evaporated. The original 2022 estimate of $283M turned into an actual of ($55.2M). In 1Q23, IPL withdrew the C$400-450Mguidance for the year, and actual EBITDA was $41.2M. **The combined two-year delta from original guidance was ($722M).**

Total FFO for IPL declined significantly in 2023. Although the pipeline business is very stable, the company took on a lot of debt both to build Heartland and to help finance the Brookfield purchase. The company has begun recognizing interest expenses that were capitalized prior to Heartland's commissioning. The result is a skyrocketing finance charges causing FFO to collapse in the face of stagnant EBITDA, as shown below.

IPL Financial Summary

(C$ millions)	**2022**	**2023**
EBITDA	1,215	1,246
FFO	984	756
Finance charges	178	460

Source: Company documents and estimates

IPL's financial statements indicate that the company did not pay distributions in 2023. Part of Brookfield's ownership is structured as interest paying debt. Total cash interest paid on the related-party debt was C$163.7M.

I assume that BIP received its proportionate share, which was C$92M.

BIP's midstream MD&A disclosure technically mentions the issues at IPL, but frames them in a way that implies the overall impact was neutralized. **There is no way investors could know from the disclosure that FFO at BIP's largest investment declined -23.2% in 2023.**

BIP's Midstream Disclosure

2023 vs. 2022

For the year ended December 31, 2023, our midstream operations generated Adjusted EBITDA of $995 million and FFO of $684 million, compared to $937 million and $743 million, respectively, during the same period in 2022. Adjusted EBITDA and FFO at our midstream operations benefited from increased utilization, higher contracted cash flows and an initial contribution from the Heartland Petrochemical Facility (HPC), partially offset by the normalization of market sensitive revenues. FFO was impacted from higher borrowing costs from refinancing and lower interest capitalization following the commissioning of HPC. Prior year results included a full year contribution from our U.S. gas pipeline, which was partially divested in Q2 2023.

Source: BIP 2023 20-F.

In contrast to BIP's blandly misleading disclosure, Fitch gets to the point directly:

IPL Performance: Fitch Gives it Straight

The affirmation takes into account challenged performance at IPL's Heartland Petrochemical Complex (Heartland), particularly at the Propane Dehydrogenation Unit (PDH Unit). Fitch expects worse profit performance from Heartland in both 2023 and 2024 compared to our prior forecast. However, these issues thus far and some potential for additional unrelated issues do not yet rise to the level of a negative rating action. If IPL's owner reduces the Fitch-forecasted medium-term dividend level to a minimal amount, the company's consolidated results in 2025 are forecasted to include leverage just under Fitch's sensitivity for a negative rating action to occur.

Source: Fitch note August 2023.

A key point from Fitch: Underperformance will continue for what looks like another two years, at least. The comment regarding dividends indicates that Brookfield will not be able to extract material dividends from IPL for the foreseeable future unless they are willing to take IPL from investment grade to junk.

Despite IPL's inability to upstream material distributions for the foreseeable future, it will remain BIP's largest contributor to FFO, rendering management's reported payout ration meaningless.

IPL may be underperforming financially, but the valuation has done well. **In 2023, the total value of the equity as reported by BIP increased 12% year over year to $5.8B from $5.2B.**

Comparative Valuation

	EV/EBITDA
Williams Co.	11.21x
IPL	14.95x

Source: Company documents, Yahoo and estimates.

Fitch sites Williams as the closest comp.

It looks like BIP's DCF valuation modes haven't been adjusted for the aggregate (C$7022M) in EBITDA misses and the continued underperformance for the next few years going forward.

VI. Management Fees Devour Equity, Financial Engineering Manufactures it

There were a lot of transactions in 2023 that significantly altered the financial statements. Total consolidated assets increased from $73B to $101B over the year. Corporate debt increased 34% to $4.9B, and total consolidated debt 52% to $15.6B. In contrast to the balance sheet, limited partner net asset value moved little, declining modestly. On an as reported basis, NAV/unit decreased -1.6% in 2023. However, closer inspection show that the NAV stability was largely the product of financial engineering.

The table below shows the LP net asset value account. I created line items for estimates of the contribution of key items on the as reported NAV and adjust the numbers to show changes in NAV ex-financial engineering.

Changes in LP Net Asset Value

	2023	2023 Adjusted
Beginning Balance	**5,372**	**5,372**
Net income	102	102
Fair value changes	*198*	*198*
Other comprehensive income	21	21
Comprehensive income	321	321
Unit issuance	12	12
Unit repurchases	(25)	(25)
Partnership distributions	*(701)*	*(701)*
Partnership Pfd distributions	(38)	(38)
Acquisition of subsidiaries	-	-
Subsidiary distributions to non-	-	-
Issuance of BIPC shares	-	-
Selling shares above NAV	*377*	-
Other items	3	3
Ending balance	**5,321**	**4,944**

NAV Contribution	
Net income	1.9%
Fair value changes	3.7%
Selling shares above NAV	7.0%

Source: Company filings and estimates. Fair value changes applicable to LPs estimated from proporiton of comprehensive income. Estimate of contribution from selling shares esimtated from changes in "other" category on the statement of partnership capital.

LP net assets decreased by a modest ($51M) or -1.6% in 2023 on an as reported basis. Distributions of over 13% of the beginning equity balance creates a difficult to fill hole on BIP's equity statement. The panel on the bottom detailing key contributors to NAV shows the source of net asset stability. Operations in the form of net income only contributed 1.9% of net assets. **The vast majority of the contributions 10.7% came from discretionary fair value marks and selling shares above NAV.** In this case, it was BIPC's 3Q23 issuance for an acquisition that was by far the most profitable transaction of the year for limited partners.

Excluding financial engineering LP net assets decrease -11.65% to $4.7B from $5.4B. As shown below, the decline is larger on a per unit basis due to the increase in units over the year.

2023 Changes in NAV/Unit

	Beginning	End	Change
NAV/Unit	$11.72	$11.53	-1.6%
Adjusted	*$11.72*	*10.29*	*-12.21%*

Source: Company filings and estimates.

A key message in 2023 is that non-operational financial adjustments drive unitholder equity. NAV/unit decreases -8.55% in the year even if we include fair value changes, making it clear that BIP's investments cannot support the expense structure.

The single-most profitable part of BIP's business model in 2023 was selling/issuing shares above NAV. In fact, BIP's entire business model hinges on selling units above NAV. Without it, NAV/unit would collapse, because net income plus fair value gains cannot reliably generate returns to cover the 22% expense burden.

APPENDIX

BIIF Private Investment Portfolio

December 31, 2023

	DATE ACQUIRED	FOOTNOTE	LOCATION	OWNERSHIP	COST[1]	FAIR VALUE
PRIVATE INVESTMENTS - 108.3%						
PRIVATE EQUITY INVESTMENTS - 95.3%						
Renewable Power & Transition 43.2%						
Canadian Wind Portfolio (Ontario Wind)	November 2022	2,3,4,5	North America	23%	$ 107,792,812	$ 113,599,103
Colombian Renewable Power (Isagen)	December 2022	2,4,5,6	Latin America	1%	102,221,233	100,976,332
Nuclear Services (Westinghouse)	November 2023	2,4,5,6	North America	3%	115,000,000	117,835,993
Terraform Renewable Power (TERP)	November 2022	2,4,5,6	Global	7%	195,081,059	197,610,275
U.K. Wind & Solar Portfolio (OnPath)	December 2023	2,4,5,6	Europe	3%	18,506,334	18,679,996
U.S. Hydro (Smoky Mountain)	March 2023	2,3,4,5	North America	28%	142,417,324	141,351,434
Total Renewable Power & Transition					681,018,762	690,053,133
Utilities 27.0%						
Australian Utility (AusNet Services)	November 2022	2,3,4,5	Asia Pacific	1%	92,214,111	99,067,180
North American Residential Infrastructure (Enercare)	November 2022	2,3,4,5	North America	3%	111,558,936	124,458,070
North American Residential Infrastructure (Homeserve)	January 2023	2,4,5,6	North America	3%	94,949,535	96,484,198
U.K. Utility (SGN)	November 2022	2,3,4,5	Europe	1%	51,268,087	53,945,067
U.S. Utility (FirstEnergy Transmission)	November 2022	2,4,5,6	North America	1%	56,033,140	56,974,335
Total Utilities					406,023,809	430,928,850
Midstream 10.9%						
Canadian Midstream (Inter Pipeline)	November 2022	2,3,4,5	North America	3%	164,782,277	173,857,590
Total Midstream					164,782,277	173,857,590
Transport 8.2%						
European LNG Vessels (Knutsen LNG)	March 2023	2,4,5,6	Europe	31%	37,420,208	37,245,008
Global Container Network (Triton International)	April 2023	2,4,5,6	North America	2%	91,275,740	93,810,489
Total Transport					128,695,948	131,055,497
Data 6.0%						
European Telecom Towers (GD Towers)	February 2023	2,4,5,6	Europe	1%	90,091,508	95,643,837
U.S. Semiconductor Foundry (Intel Partnership)	January 2023	2,3,4,5	North America	1%	–	–
Total Data					90,091,508	95,643,837
Total PRIVATE EQUITY INVESTMENTS					**1,470,612,304**	**1,521,538,907**

Source: Brookfield Infrastructure Income Fund annual report.

BIIF Private Investment Portfolio

11. INVESTMENTS IN AFFILIATED ISSUERS

The table below reflects transactions during the period with entities that are affiliates as of December 31, 2023.

	Opening Value	Purchases, net of returns of capital[1]	Sales	Unrealized Appreciation (Depreciation)	End Value	Dividend and Distributions Income[2]
Australian Utility (AusNet Services)	$ —	$ 92,214,111	$ —	$ 6,853,069	$ 99,067,180	$ 878,222
BII BID Aggregator A L.P.	—	112,978,516	—	1,750,934	114,729,450	—
BII BID Aggregator B L.P.	—	89,534,448	—	3,186,404	92,720,852	—
Canadian Midstream (Inter Pipeline)	—	164,782,277	—	9,075,313	173,857,590	3,174,584
Canadian Wind Portfolio (Ontario Wind)	—	107,792,812	—	5,806,291	113,599,103	—
Colombian Renewable Power (Isagen)	—	102,221,233	—	(1,244,901)	100,976,332	735,523
European LNG Vessels (Knutsen LNG)	—	37,420,208	—	(175,200)	37,245,008	866,361
European Telecom Towers (GD Towers)	—	90,091,508	—	5,552,329	95,643,837	—
Global Container Network (Triton International)	—	91,275,740	—	2,534,749	93,810,489	—
North American Residential Infrastructure (Enercare)	—	111,558,937	—	12,899,133	124,458,070	—
North American Residential Infrastructure (Homeserve)	—	94,949,534	—	1,534,664	96,484,198	1,133,204
Nuclear Services (Westinghouse)	—	115,000,000	—	2,835,993	117,835,993	—
Terraform Renewable Power (TERP)	—	195,081,059	—	2,529,216	197,610,275	340,000
U.K. Utility (SGN)	—	51,268,087	—	2,676,980	53,945,067	864,899
U.K. Wind & Solar Portfolio (OnPath)	—	18,506,334	—	173,662	18,679,996	—
U.S. Hydro (Smoky Mountain)	—	142,417,323	—	(1,065,889)	141,351,434	5,139,704
U.S. Semiconductor Foundry (Intel Partnership)	—	—	—	—	—	—
U.S. Utility (FirstEnergy Transmission)	—	56,033,140	—	941,195	56,974,335	33,179
	$ —	$ 1,673,125,267	$ —	$ 55,863,942	$ 1,728,989,209	$ 13,165,676

Source: Brookfield Infrastructure Income Fund annual report.