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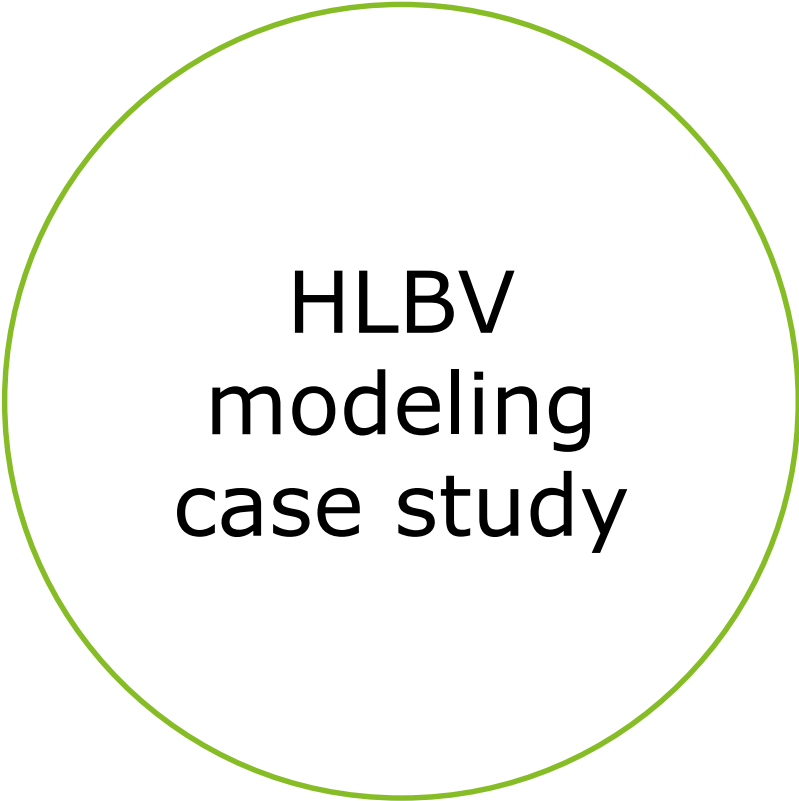


2016 Deloitte Alternative Energy Seminar

Setting new sights

November 14-16, 2016

Deloitte Center *for*
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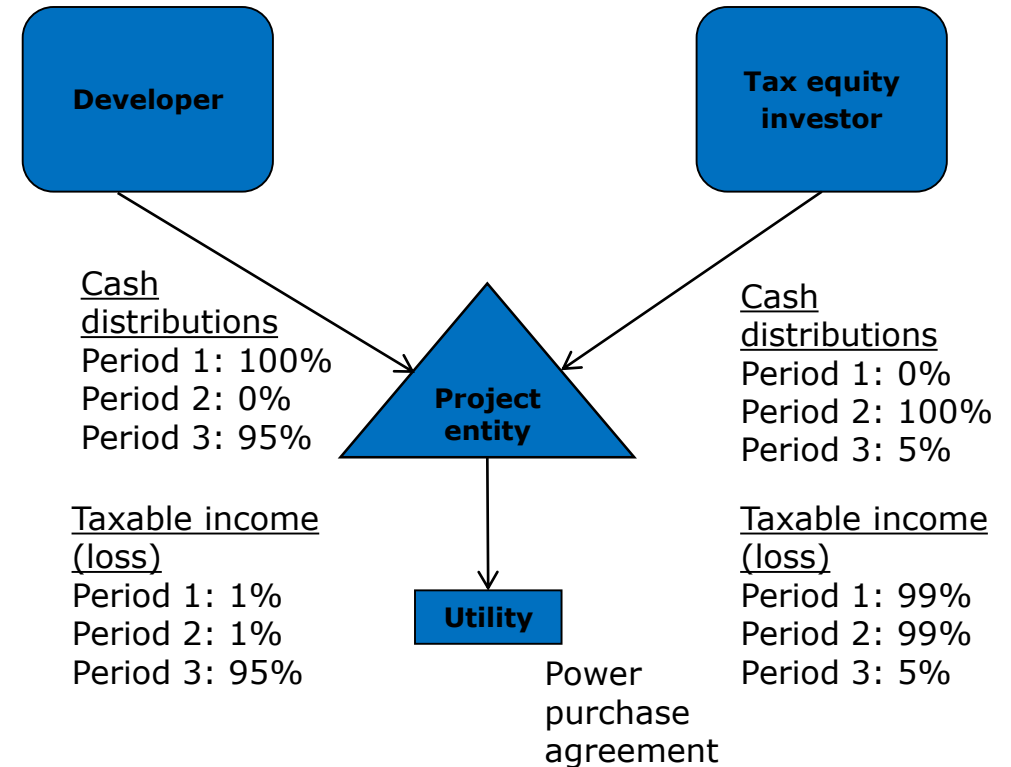
HLBV
modeling
case study

HLBV concepts & accounting theory

HLBV concepts & accounting theory

A partnership flip structure is a financing structure where

- Project entity is structured as an LLC, and thus is a flow-thru entity for tax purposes
- Developer and managing member of the partnership
- Tax equity investor
 - The tax equity investor is an entity that can use certain of the tax benefits associated with the renewable project
 - Investor initially is allocated as much as 99% of tax items and subsequently "flips" down to an insignificant amount after achieving a specified after-tax IRR
- Developer
 - Typically the operator and managing member of the partnership
 - Repurchase option post flip date
 - ROI earned largely through PPA cash flows
- Tax equity investor
 - Sufficient taxable income to monetize tax benefits
 - ROE earned through allocation of tax benefits and then minor "post-flip" cash flows



HLBV concepts & accounting theory

- HLBV is a balance sheet-oriented approach to the equity method of accounting which provides a methodology for allocating pre-tax GAAP income or loss to an investor
- HLBV calculates the amount each partner would receive if the partnership were liquidated at book value at the end of each measurement period. The change in the allocated amount to each partner during the period is book income/loss allocated to that partner (adjusted for distributions and contributions)
- Generally, the HLBV Method is not considered appropriate where the conventional equity method can be applied
- When an investor receives allocations of income/loss that are disproportionate to its equity interest in the investee (such as that found in partnership flip structures), it may not be appropriate to record equity method income/loss on the basis of the percentage of equity interest owned.
- Challenges to conventional application of equity method for partnership flip structures :
 - Investee’s capital structure provides different rights and priorities to its owners or ownership percentages are not specified (or varies over the life of the investment)

In order to determine the amount allocated to each partner, an analysis of the partners’ capital accounts (as adjusted per the liquidation provisions of the partnership agreement) must be performed

HLBV case study

HLBV case study – 20MW solar project

- 20MW Solar Project
- Annual Production – 32,000MWh, 0.50% Annual Degradation
- Project FMV - \$35,000,000 (\$1.75 / watt-dc)
- Investment Tax Credit - \$10,500,000 (assume that 100% of Project FMV is ITC-eligible for this example)
- PPA - \$75.00 / MWh, escalating 1.00% / year for 20 years
- Operating Expenses – approx. 20% of revenues
- Tax Equity Contribution - \$15.5 million
- Sponsor Equity Contribution \$19.5 million
- Tax Equity Target IRR – 8.00% After-Tax IRR

HLBV case study – steps for calculating HLBV

1. Calculate partnership's Earnings Before Taxes (EBT)
2. Calculate net (GAAP) assets of the partnership – several approaches:
 - a. Entire balance sheet
 - b. Assets (PP&E) only
 - c. Equity only
3. Calculate net (Tax) assets of the partnership – several approaches:
 - a. Assets (PP&E) only
 - b. 704(b) Capital Accounts
4. Calculate tax gain or loss on hypothetical liquidation of the partnership
5. Allocate tax gain in accordance with liquidation provisions in partnership agreement.
 - a. Allocate gain to partners with negative 704(b) capital account
 - b. Allocate gain to tax equity investor until their Target IRR is achieved
 - c. Allocate remaining gain in accordance with post-flip allocation ratios
6. Calculate partners' claims on book value (Ending 704(b) capital account plus allocations of hypothetical tax gain from liquidation waterfall)
7. Determine change in each partner's claim on partnership book value during the period (adjusted for contributions and distributions)

For purposes of this case study, we assume a generic set of liquidation provisions in computing HLBV. In practice, there is tremendous diversity in liquidation provisions from deal to deal, as partners develop provisions which better reflect their economic arrangement.

HLBV case study – step 1 – calculate partnership EBT

		31-Dec-17	31-Dec-18	31-Dec-19	31-Dec-20	31-Dec-21
Production						
Annual Output - First Year	<i>MWh</i>	32,000	32,000	32,000	32,000	32,000
Production Factor	%	75.34%	99.50%	99.00%	98.51%	98.01%
Annual Output	<i>MWh</i>	24,110	31,840	31,681	31,522	31,365
Revenues						
PPA Production		24,110	31,840	31,681	31,522	31,365
PPA Escalator		0.00%	1.00%	2.01%	3.03%	4.06%
PPA Price	\$	75.00	\$ 75.75	\$ 76.51	\$ 77.27	\$ 78.05
PPA Revenues	\$	1,808,219	\$ 2,411,880	\$ 2,423,819	\$ 2,435,817	\$ 2,447,874
Operating Expenses						
Operating Expenses (20.00% of Revenue)		(361,644)	(482,376)	(484,764)	(487,163)	(489,575)
EBITDA	\$	1,446,575	\$ 1,929,504	\$ 1,939,055	\$ 1,948,653	\$ 1,958,299
Depreciation & Amortization	\$	(833,333)	\$ (1,000,000)	\$ (1,000,000)	\$ (1,000,000)	\$ (1,000,000)
EBIT	\$	613,242	\$ 929,504	\$ 939,055	\$ 948,653	\$ 958,299

HLBV is utilized to compute allocations of EBT to each of the partners. Tax provision calculations are performed at the partner level.

HLBV case study – step 2 – calculate net (GAAP) assets of the partnership

Calculate GAAP Book Value	31-Dec-17	31-Dec-18	31-Dec-19	31-Dec-20	31-Dec-21
Beginning Balance	35,000,000	34,166,667	33,166,667	32,166,667	31,166,667
Add: Capital Contributions	-	-	-	-	-
Less: Cash Distributions	(1,446,575)	(1,929,504)	(1,939,055)	(1,948,653)	(1,958,299)
Pre-Tax GAAP Income / (Loss)	613,242	929,504	939,055	948,653	958,299
GAAP Equity (Liquidation Value)	34,166,667	33,166,667	32,166,667	31,166,667	30,166,667

This example uses GAAP equity as the measure of GAAP book value – several options exist for computing GAAP book value.

HLBV case study – step 3 – calculate net (tax) assets of the partnership

Investor 704(b) Capital Account	Contribution 1	Contribution 2	COD	2016	2017	2018	2019	2020	2021
	14-Feb-17	26-Mar-17	31-Mar-17						
Beginning Balance	-	3,100,000	15,500,000	15,500,000	15,500,000	5,482,466	(2,514,501)	(5,223,999)	(6,200,000)
Add: Capital Contributions	3,100,000	12,400,000							
Less: Cash Distributions		-	-	-	(361,644)	(482,376)	(484,764)	(487,163)	(489,575)
Less: ITC Adjustment				-	(5,197,500)	-	-	-	-
Add: Taxable Income / (Loss) Allocation		-	-	-	(4,458,390)	(7,514,591)	(2,527,873)	(990,626)	(984,164)
Add: 734 Adjustment				-	-	-	324,792	326,399	-
Less: 734 Depreciation				-	-	-	(21,653)	(43,413)	(43,413)
Ending 704(b) Capital Account Balance (Tentative)	3,100,000	15,500,000	15,500,000	15,500,000	5,482,466	(2,514,501)	(5,223,999)	(6,418,802)	(7,717,151)
Add: Partner's Deficit Restoration Obligation	6,200,000	6,200,000	6,200,000	6,200,000	6,200,000	6,200,000	6,200,000	6,200,000	6,200,000
Ending 704(b) Capital Account Balance - Adjusted	9,300,000	21,700,000	21,700,000	21,700,000	11,682,466	3,685,499	976,001	(218,802)	(1,517,151)
Add: Stop-Loss Reallocation from Investor to Sponsor	-	-	-	-	-	-	-	218,802	1,517,151
Ending 704(b) Capital Account Balance After Stop-Loss Reallocation to Sponsor	3,100,000	15,500,000	15,500,000	15,500,000	5,482,466	(2,514,501)	(5,223,999)	(6,200,000)	(6,200,000)
Add: Partner's Deficit Restoration Obligation	6,200,000	6,200,000	6,200,000	6,200,000	6,200,000	6,200,000	6,200,000	6,200,000	6,200,000
Ending 704(b) Capital Account Balance - Adjusted After Stop-Loss Reallocation to Sponsor	9,300,000	21,700,000	21,700,000	21,700,000	11,682,466	3,685,499	976,001	-	-
Add: Stop-Loss Reallocation from Sponsor to Investor	-	-	-	-	-	-	-	-	-
Ending 704(b) Capital Account Balance After Stop-Loss Reallocation to Investor	3,100,000	15,500,000	15,500,000	15,500,000	5,482,466	(2,514,501)	(5,223,999)	(6,200,000)	(6,200,000)
Add: Partner's Deficit Restoration Obligation	6,200,000	6,200,000	6,200,000	6,200,000	6,200,000	6,200,000	6,200,000	6,200,000	6,200,000
Ending 704(b) Capital Account Balance - Adjusted After Stop-Loss Reallocation to Investor	9,300,000	21,700,000	21,700,000	21,700,000	11,682,466	3,685,499	976,001	-	-

HLBV case study – step 3 – calculate net (tax) assets of the partnership

Investor Outside Basis	Contribution 1	Contribution 2	COD	2016	2017	2018	2019	2020	2021
	14-Feb-17	26-Mar-17	31-Mar-17						
Beginning Balance	-	3,100,000	15,500,000	15,500,000	15,500,000	5,482,466	-	-	-
Add: Capital Contributions	3,100,000	12,400,000							
Add: Taxable Income Under 704(b)				-	-	-	-	-	489,575
Less: ITC Adjustment				-	(5,197,500)	-	-	-	-
Investor Outside Basis Before Cash Distributions	3,100,000	15,500,000	15,500,000	15,500,000	10,302,500	5,482,466	-	-	489,575
Less: Cash Distributions	-	-	-	-	(361,644)	(482,376)	(484,764)	(487,163)	(489,575)
Investor Outside Basis After Cash Distributions	3,100,000	15,500,000	15,500,000	15,500,000	9,940,856	5,000,090	(484,764)	(487,163)	-
Add: Distributions in Excess of Outside Basis				-	-	-	484,764	487,163	-
Investor Outside Basis Before Allocations of Loss	3,100,000	15,500,000	15,500,000	15,500,000	9,940,856	5,000,090	-	-	-
Less: Taxable Loss Under 704(b)				-	(4,458,390)	(7,514,591)	(2,549,526)	(815,237)	-
Investor Outside Basis Before Suspended Losses	3,100,000	15,500,000	15,500,000	15,500,000	5,482,466	(2,514,501)	(2,549,526)	(815,237)	-
Add: Suspended Losses Generated				-	-	2,514,501	2,549,526	815,237	-
Less: Suspended Losses Utilized				-	-	-	-	-	-
Ending Balance	3,100,000	15,500,000	15,500,000	15,500,000	5,482,466	-	-	-	-

HLBV case study – step 3 – calculate net (tax) assets of the partnership

Sponsor 704(b) Capital Account	Contribution 1	Contribution 2	COD	2016	2017	2018	2019	2020	2021
	14-Feb-17	26-Mar-17	31-Mar-17						
Beginning Balance	-	19,500,000	19,500,000	19,500,000	19,500,000	18,317,534	16,794,501	14,244,445	12,215,614
Add: Capital Contributions	19,500,000								
Less: Cash Distributions				-	(1,084,932)	(1,447,128)	(1,454,291)	(1,461,490)	(1,468,724)
Less: ITC Adjustment				-	(52,500)	-	-	-	-
Add: Taxable Income / (Loss) Allocation				-	(45,034)	(75,905)	(1,245,072)	(487,920)	(484,737)
Add: 734 Adjustment				-	-	-	159,972	160,764	-
Less: 734 Depreciation				-	-	-	(10,665)	(21,382)	(21,382)
Ending 704(b) Capital Account Balance (Tentative)	19,500,000	19,500,000	19,500,000	19,500,000	18,317,534	16,794,501	14,244,445	12,434,416	10,240,770
Add: Partner's Deficit Restoration Obligation	3,900,000	3,900,000	3,900,000	3,900,000	3,900,000	3,900,000	3,900,000	3,900,000	3,900,000
Ending 704(b) Capital Account Balance - Adjusted	23,400,000	23,400,000	23,400,000	23,400,000	22,217,534	20,694,501	18,144,445	16,334,416	14,140,770
Add: Stop-Loss Reallocation from Sponsor to Investor	-	-	-	-	-	-	-	-	-
Ending 704(b) Capital Account Balance After Stop-Loss Reallocation to Investor	19,500,000	19,500,000	19,500,000	19,500,000	18,317,534	16,794,501	14,244,445	12,434,416	10,240,770
Add: Partner's Deficit Restoration Obligation	3,900,000	3,900,000	3,900,000	3,900,000	3,900,000	3,900,000	3,900,000	3,900,000	3,900,000
Ending 704(b) Capital Account Balance - Adjusted After Stop-Loss Reallocation to Investor	23,400,000	23,400,000	23,400,000	23,400,000	22,217,534	20,694,501	18,144,445	16,334,416	14,140,770
Add: Stop-Loss Reallocation from Investor to Sponsor	-	-	-	-	-	-	-	(218,802)	(1,517,151)
Ending 704(b) Capital Account Balance After Stop-Loss Reallocation to Sponsor	19,500,000	19,500,000	19,500,000	19,500,000	18,317,534	16,794,501	14,244,445	12,215,614	8,723,619
Add: Partner's Deficit Restoration Obligation	3,900,000	3,900,000	3,900,000	3,900,000	3,900,000	3,900,000	3,900,000	3,900,000	3,900,000
Ending 704(b) Capital Account Balance - Adjusted After Stop-Loss Reallocation to Sponsor	23,400,000	23,400,000	23,400,000	23,400,000	22,217,534	20,694,501	18,144,445	16,115,614	12,623,619

HLBV case study – step 3 – calculate net (tax) assets of the partnership

Sponsor Outside Basis	Contribution 1	Contribution 2	COD	2016	2017	2018	2019	2020	2021
	14-Feb-17	26-Mar-17	31-Mar-17						
Beginning Balance	-	19,500,000	19,500,000	19,500,000	19,500,000	18,317,534	16,794,501	14,084,473	11,894,878
Add: Capital Contributions	19,500,000	-	-	-	-	-	-	-	-
Add: Taxable Income Under 704(b)				-	-	-	-	-	-
Less: ITC Adjustment				-	(52,500)	-	-	-	-
Sponsor Outside Basis Before Cash Distributions	19,500,000	19,500,000	19,500,000	19,500,000	19,447,500	18,317,534	16,794,501	14,084,473	11,894,878
Less: Cash Distributions				-	(1,084,932)	(1,447,128)	(1,454,291)	(1,461,490)	(1,468,724)
Sponsor Outside Basis After Cash Distributions	19,500,000	19,500,000	19,500,000	19,500,000	18,362,568	16,870,406	15,340,210	12,622,983	10,426,154
Add: Distributions in Excess of Outside Basis	-	-	-	-	-	-	-	-	-
Sponsor Outside Basis Before Allocations of Loss	19,500,000	19,500,000	19,500,000	19,500,000	18,362,568	16,870,406	15,340,210	12,622,983	10,426,154
Less: Taxable Loss Under 704(b)				-	(45,034)	(75,905)	(1,255,737)	(728,105)	(2,023,271)
Sponsor Outside Basis Before Suspended Losses	19,500,000	19,500,000	19,500,000	19,500,000	18,317,534	16,794,501	14,084,473	11,894,878	8,402,883
Add: Suspended Losses Generated				-	-	-	-	-	-
Less: Suspended Losses Utilized				-	-	-	-	-	-
Ending Balance	19,500,000	19,500,000	19,500,000	19,500,000	18,317,534	16,794,501	14,084,473	11,894,878	8,402,883

HLBV case study – step 4 – calculate tax gain or loss on hypothetical liquidation of the partnership

Calculate Hypothetical Gain on Liquidation	31-Dec-17	31-Dec-18	31-Dec-19	31-Dec-20	31-Dec-21
GAAP Basis	34,166,667	33,166,667	32,166,667	31,166,667	30,166,667
Tax Basis	23,800,000	14,280,000	9,020,446	6,015,614	2,523,619
Hypothetical Gain / (Loss) on Liquidation	10,366,667	18,886,667	23,146,220	25,151,052	27,643,047

HLBV Case Study – Step 5A – Allocate gain to partners with negative 704(b) capital account

Allocate Gain to Restore Negative Capital Account	31-Dec-17	31-Dec-18	31-Dec-19	31-Dec-20	31-Dec-21
Investor	-	2,514,501	5,223,999	6,200,000	6,200,000
Sponsor	-	-	-	-	-
Gain / (Loss) Remaining After Step 5A	10,366,667	16,372,165	17,922,221	18,951,052	21,443,047

HLBV case study – step 5B – allocate gain to tax equity investor until their target IRR is achieved

Allocate Gain to Investor to Achieve Target IRR		31-Dec-17	31-Dec-18	31-Dec-19	31-Dec-20	31-Dec-21
		8/15/2017	7/1/2018	7/1/2019	7/1/2020	7/1/2021
		4	5	6	7	8
After-Tax Cash Flows (Before HLBV)		12,317,080	2,232,407	307,518	301,462	303,029
Investor After-Tax IRR Before Restoration of Negative Capital Account		-42.88%	-10.85%	-6.96%	-3.42%	-0.35%
Allocation of Gain to Restore Negative Capital Account		-	2,514,501	5,223,999	6,200,000	6,200,000
Investor After-Tax IRR After Restoration of Negative Capital Account		-42.88%	-21.98%	0.00%	0.00%	0.00%
After-Tax Cash Required to Achieve Target IRR	8.00%	3,681,465	2,585,688	3,362,943	3,526,195	3,331,661
Less: Cash Distribution - Positive Capital Account	35.00%	(5,482,466)	-	-	-	-
After-Tax Gain Required to Achieve Target IRR		(1,801,001)	2,585,688	3,362,943	3,526,195	3,331,661
Pre-Tax Gain Required to Achieve Target IRR		(2,770,770)	3,977,981	5,173,759	5,424,915	5,125,633
Gain / (Loss) Available for Allocation		10,366,667	16,372,165	17,922,221	18,951,052	21,443,047
Gain Allocated to Investor to Achieve Target IRR		-	3,977,981	5,173,759	5,424,915	5,125,633
Gain / (Loss) Remaining After Step 5B		10,366,667	12,394,184	12,748,462	13,526,137	16,317,415

HLBV case study – step 5C – allocate remaining gain in accordance with post-flip allocation ratios

Allocate Remaining Gain / (Loss) in Accordance with Tax Allocation %	31-Dec-17	31-Dec-18	31-Dec-19	31-Dec-20	31-Dec-21
Investor 5.00%	518,333	619,709	637,423	676,307	815,871
Sponsor	9,848,333	11,774,475	12,111,039	12,849,830	15,501,544
Gain / (Loss) Remaining After Step 5C	-	-	-	-	-

HLBV case study – step 6 and 7 – calculate partners' claims on book value and calculate HLBV book income (change in claims on book value)

Claim on Book Value / HLBV Income Calculation	31-Dec-17	31-Dec-18	31-Dec-19	31-Dec-20	31-Dec-21
Investor Claim on Partnership Book Value					
Claim on Partnership Book Value - Ending	6,000,799	4,597,691	5,811,182	6,101,222	5,941,503
Claim on Partnership Book Value - Beginning	15,500,000	6,000,799	4,597,691	5,811,182	6,101,222
Change in Investor Claim on Partnership Book Value	(9,499,201)	(1,403,108)	1,213,491	290,040	(159,719)
Less: Capital Contributions	-	-	-	-	-
Add: Cash Distributions	361,644	482,376	484,764	487,163	489,575
INVESTOR PRE-TAX BOOK INCOME / (LOSS)	(9,137,557)	(920,732)	1,698,255	777,203	329,856

	31-Dec-17	31-Dec-18	31-Dec-19	31-Dec-20	31-Dec-21
Sponsor Claim on Partnership Book Value					
Claim on Partnership Book Value - Ending	28,165,868	28,568,976	26,355,485	25,065,445	24,225,163
Claim on Partnership Book Value - Beginning	19,500,000	28,165,868	28,568,976	26,355,485	25,065,445
Change in Sponsor Claim on Partnership Book Value	8,665,868	403,108	(2,213,491)	(1,290,040)	(840,281)
Less: Capital Contributions	-	-	-	-	-
Add: Cash Distributions	1,084,932	1,447,128	1,454,291	1,461,490	1,468,724
SPONSOR PRE-TAX BOOK INCOME / (LOSS)	9,750,799	1,850,236	(759,200)	171,450	628,443

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