Par Pacific

INVESTOR PRESENTATION | AUGUST 2023

Forward-Looking Statements / Disclaimers

The information contained in this presentation has been prepared to assist you in making your own evaluation of the company and does not purport to contain all of the information you may consider important. Any estimates or projections with respect to future performance have been provided to assist you in your evaluation, but should not be relied upon as an accurate representation of future results. Certain statements, estimates and financial information contained in this presentation constitute forward-looking statements.

Such forward-looking statements involve known and unknown risks and uncertainties that could cause actual events or results to differ materially from the results implied or expressed in such forward-looking statements. While presented with numerical specificity, certain forward-looking statements are based (1) upon assumptions that are inherently subject to significant business, economic, regulatory, environmental, seasonal and competitive uncertainties, contingencies and risks including, without limitation, our ability to maintain adequate liquidity, our ability to realize the potential benefit of our net operating loss tax carryforwards, our ability to obtain sufficient debt and equity financing, our capital costs and operating costs, anticipated commodity pricing, anticipated refinery closures, differentials or crack spreads, anticipated or projected pricing information related to oil, NGLs, and natural gas, our ability to realize the potential benefits of our supply and offtake agreements and LC facility agreements, assumptions related to our investment in Laramie Energy, LLC, Laramie Energy, LLC's financial and operational performance and plans, including estimated production growth and Adjusted EBITDAX, our ability to meet environmental and regulatory requirements, our ability to increase refinery throughput and profitability, estimated production, our ability to evaluate and pursue strategic and growth opportunities, our estimates of anticipated Adjusted EBITDA, Adjusted Net income per share, and Adjusted earnings per share, the amount and scope of anticipated capital expenditures and turnaround activities, expectations related to our potential renewable fuels projects, other maintenance and growth capital projects, anticipated 10 year and next 12 months turnaround schedule and expenditures, including costs, timing, and benefits, anticipated throughput, production costs, on-island and export sales expectations in Hawaii, anticipated throughput and distillate yield expectations in Wyoming, our estimates related to the annual gross margin impact of changes in RINs prices, our expectations regarding RINs prices and related small refinery exemptions, estimates related to the impact of COVID-19 on our business, results of operations, financial position, and liquidity, the conflict between Russia and Ukraine and its potential impacts on the global crude oil market and our business, estimated impact on annual free cash flow of key drivers, expectations regarding Par Pacific's posted market indices and the other metrics we utilize (including free cash flow, Adjusted EBITDA, Adjusted Net Income, and Adjusted earnings per share), the effects of the acquisition of the ExxonMobil Billings refinery and associated marketing and logistics assets (the "Acquisition"), the anticipated synergies and other benefits of the Acquisition, including renewable growth opportunities, the anticipated financial and operating results of the Acquisition and the effect on the Company's cash flows and profitability (including Adjusted EBITDA and Adjusted Net Income and free cash flow per share) and other known and unknown risks (all of which are difficult to predict and many of which are beyond the company's control), some of which are further discussed in the company's periodic and other filings with the SEC and (2) upon assumptions with respect to future business decisions that are subject to change.

There can be no assurance that the results implied or expressed in such forward-looking statements or the underlying assumptions will be realized and that actual results of operations or future events will not be materially different from the results implied or expressed in such forward-looking statements. Under no circumstances should the inclusion of the forward-looking statements be regarded as a representation, undertaking, warranty or prediction by the company or any other person with respect to the accuracy thereof or the accuracy of the underlying assumptions, or that the company will achieve or is likely to achieve any particular results. The forward-looking statements are made as of the date hereof and the company disclaims any intent or obligation to update publicly or to revise any of the forward-looking statements, whether as a result of new information, future events or otherwise, except as may be required by applicable law. Recipients are cautioned that forward-looking statements are not guarantees of future performance and, accordingly, recipients are expressly cautioned not to put undue reliance on forward-looking statements due to the inherent uncertainty therein.

This presentation contains non-GAAP financial measures, such as Adjusted EBITDA, Adjusted Net Income (loss), and Laramie Energy Adjusted EBITDAX. Beginning with financial results reported for periods in fiscal year 2022, the inventory valuation adjustment was modified to include the first-in, first-out ("FIFO") inventory gains (losses) associated with our titled manufactured inventory in Hawaii. Beginning with financial results reported for the second quarter of 2022, Adjusted Net Income and Adjusted EBITDA also exclude the mark-to-market losses (gains) associated with our net RINs liability. Beginning with the financial results reported in the first quarter of 2023, Adjusted Net Income and Adjusted EBITDA also exclude the mark-to-market losses (gains) associated with our net Washington CCA liability. These modifications were made to better reflect our operating performance and to improve comparability between periods. Adjusted Net Income and Adjusted EBITDA have been recast for prior periods when reported to conform to the modified presentation. Please see the Appendix for the definitions and reconciliations to GAAP of the non-GAAP financial measures that are based on reconcilable historical information.

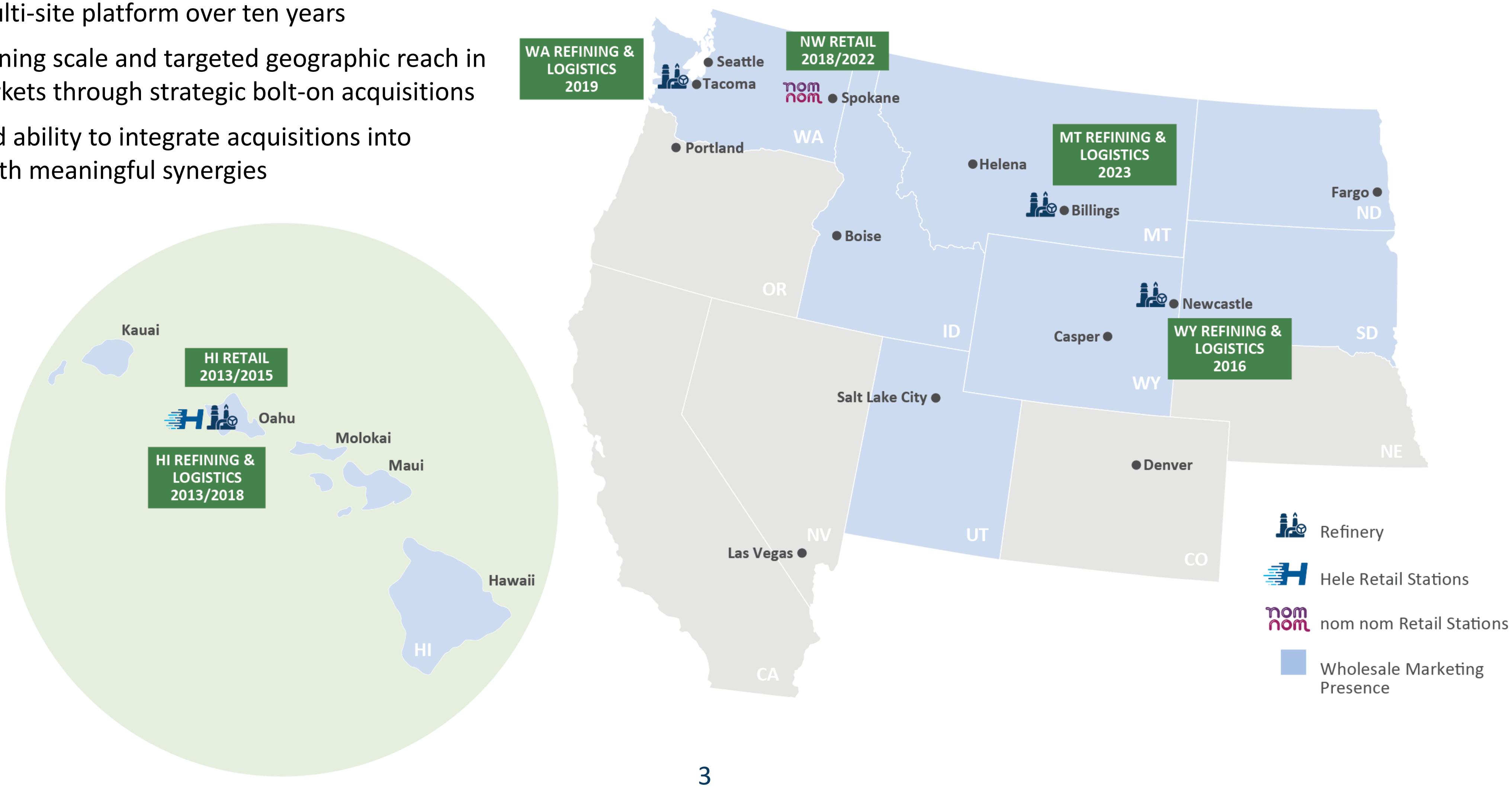
Company Highlights

- Rapidly growing owner & operator of essential energy infrastructure
- Integrated logistics network with 13 MMbbls of storage, and marine, rail and pipeline assets
- System-wide refining capacity of 218,000 bpd
- Peer-group leading distillate cut, driving higher margins
- 121 fuel retail locations in Hawaii and the Pacific Northwest
- Stable EBITDA contribution from retail and logistics segments
- 46% ownership interest in Laramie Energy, a natural gas E&P company
- $1.2 billion in federal tax attributes as of December 31, 2022

Disciplined Focus on Increasing Adjusted EPS and Free Cash Flow

History of Successful Acquisitions

- Successful expansion from single refinery to vertically integrated multi-site platform over ten years
- Increased refining scale and targeted geographic reach in favorable markets through strategic bolt-on acquisitions
- Demonstrated ability to integrate acquisitions into operations with meaningful synergies



Attractive Relative Valuation

Peer Comparison	**7/31/23 Share Price *($/sh)***	**2023 Adj. EPS [1] *($/sh)***	**2023 P/E Multiple**
Par Pacific	**$31.48**	**$5.26**	**6.0x**
HF Sinclair	$52.09	$7.82	6.7x
Delek	$27.59	$3.14	8.8x
CVR	$36.74	$4.13	8.9x
Calumet	$16.35	$1.02	16.0x

1. *2023 Adj. EPS based on street estimates as of 8/1/23. Source: NYSE Connect.*

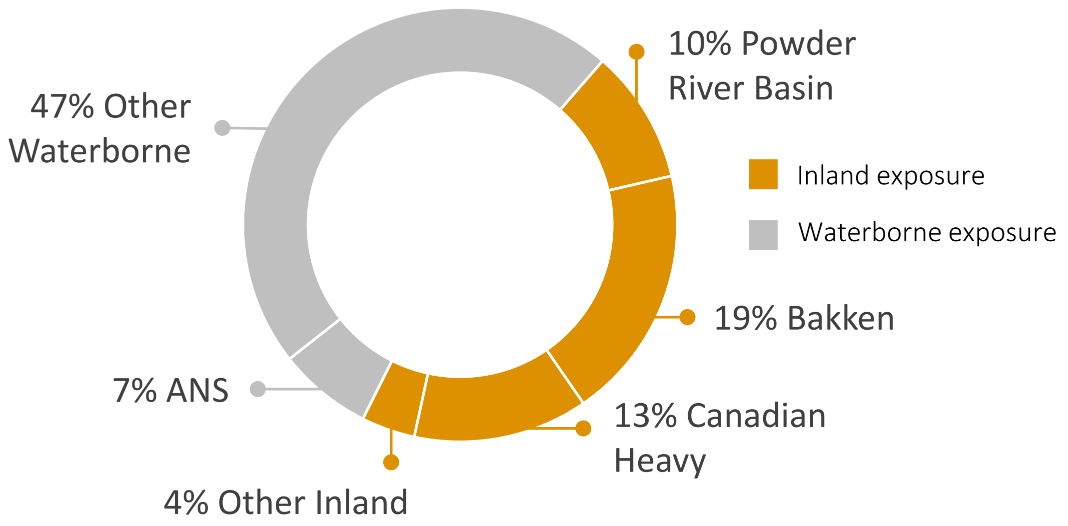
Refining Overview

Refining Segment Highlights

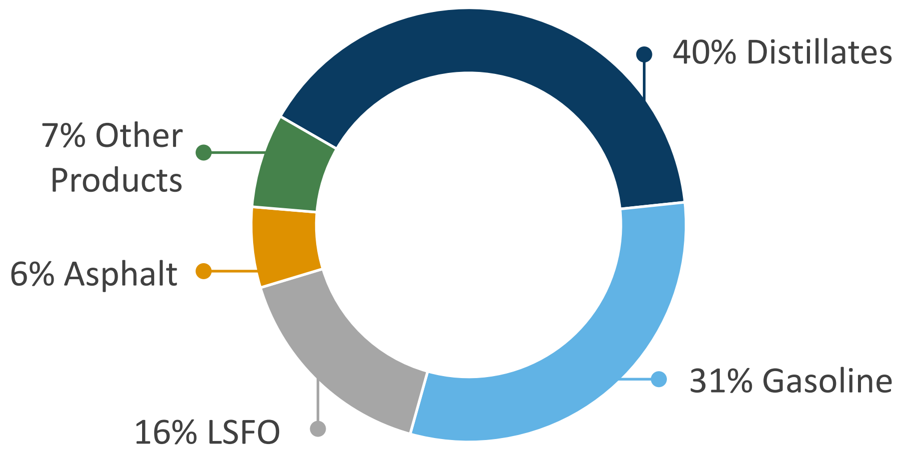
- Focus on process safety, environmental compliance and operational reliability
- System-wide crude capacity of 218,000 bpd
- Throughput and yield optimized to serve local market needs
- Expected 50% system-wide distillate & LSFO yield [1]
- Expected 20% system-wide exposure to attractive Western Canadian heavy crude [1]

Refinery Crude Capacity	Mbpd
Hawaii	94
Washington	42
Wyoming	19
Montana	63
Par Pacific System	**218**

6/30/23 YTD Crude Sourcing



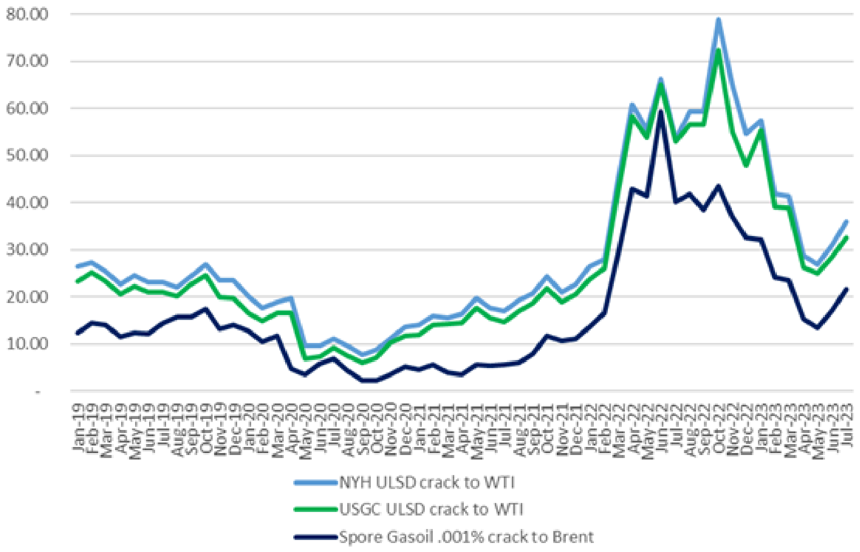
6/30/23 YTD Combined Product Yield



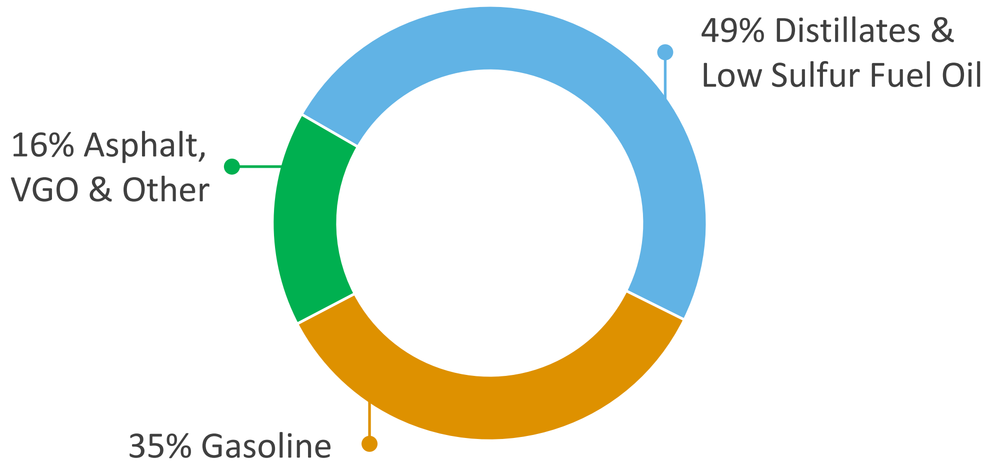
1. *Expected system-wide yield and crude exposure include full-year estimates for Billings.*

Distillate-Oriented Yield Profile

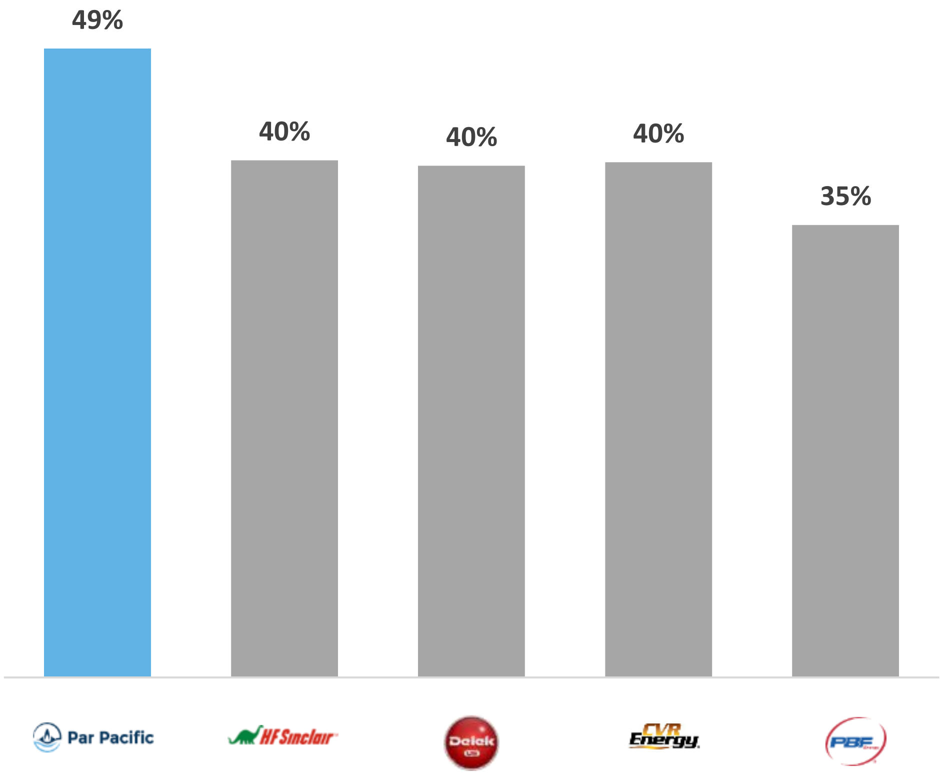
Distillate Cracks ($/bbl)



Par Pacific System-wide Yield [1]



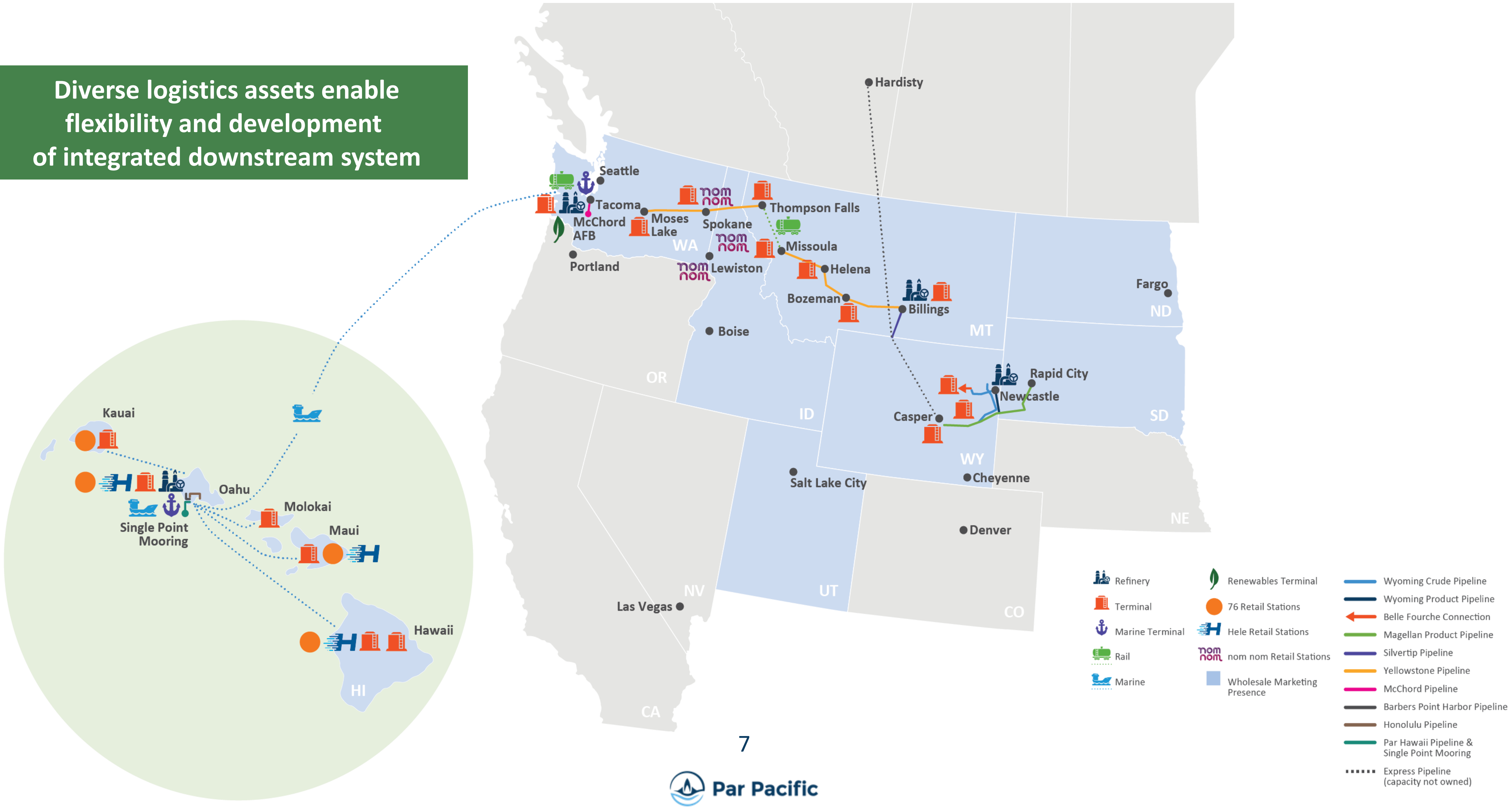
Advantaged Distillate Yield % [1]



1. Par Pacific system-wide and distillate yields are based on 2022 yield for Hawaii, Washington, and Wyoming refineries and 2020-21 Billings average product yield. Peer yields are based on respective 12/31/22 SEC filings.

Multimodal Logistics System

Diverse logistics assets enable flexibility and development of integrated downstream system



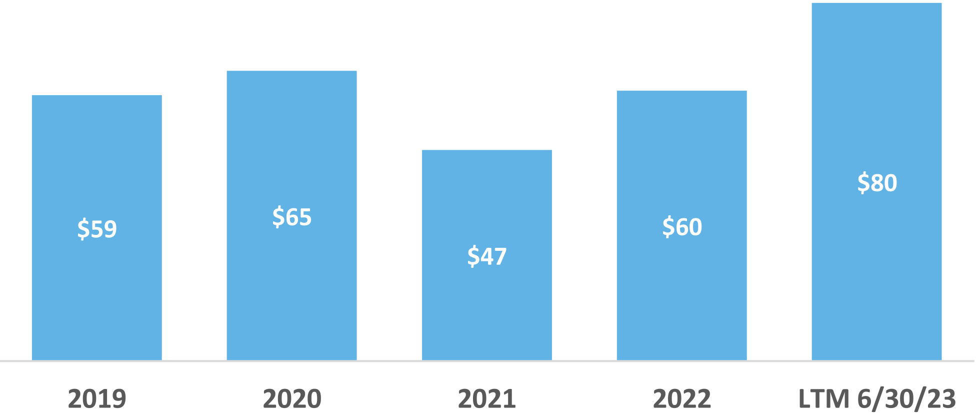
Leading Retail Position in Attractive Markets

Hawaii Retail

- 90 locations across four islands
- 34 company-operated convenience stores
- Scarcity of land, high real estate costs and logistics complexity strengthen competitive position
- Dual-branded retail network to attract and retain broad customer base
    - Hele – proprietary local brand
    - 76 – exclusive license
- Expanding private label merchandise and food service offerings
- New Hawaii location broke ground in Q4 2022

Northwest Retail

- 31 company-operated locations in Washington and Idaho
- Proprietary nomnom brand
- Attractive fuel supply opportunities enhancing margins
- Expanding merchandising assortment and food offerings, including private label merchandise, to drive and increase margin capture
- Closed acquisition of three locations and broke ground on new flagship location in Q4 2022

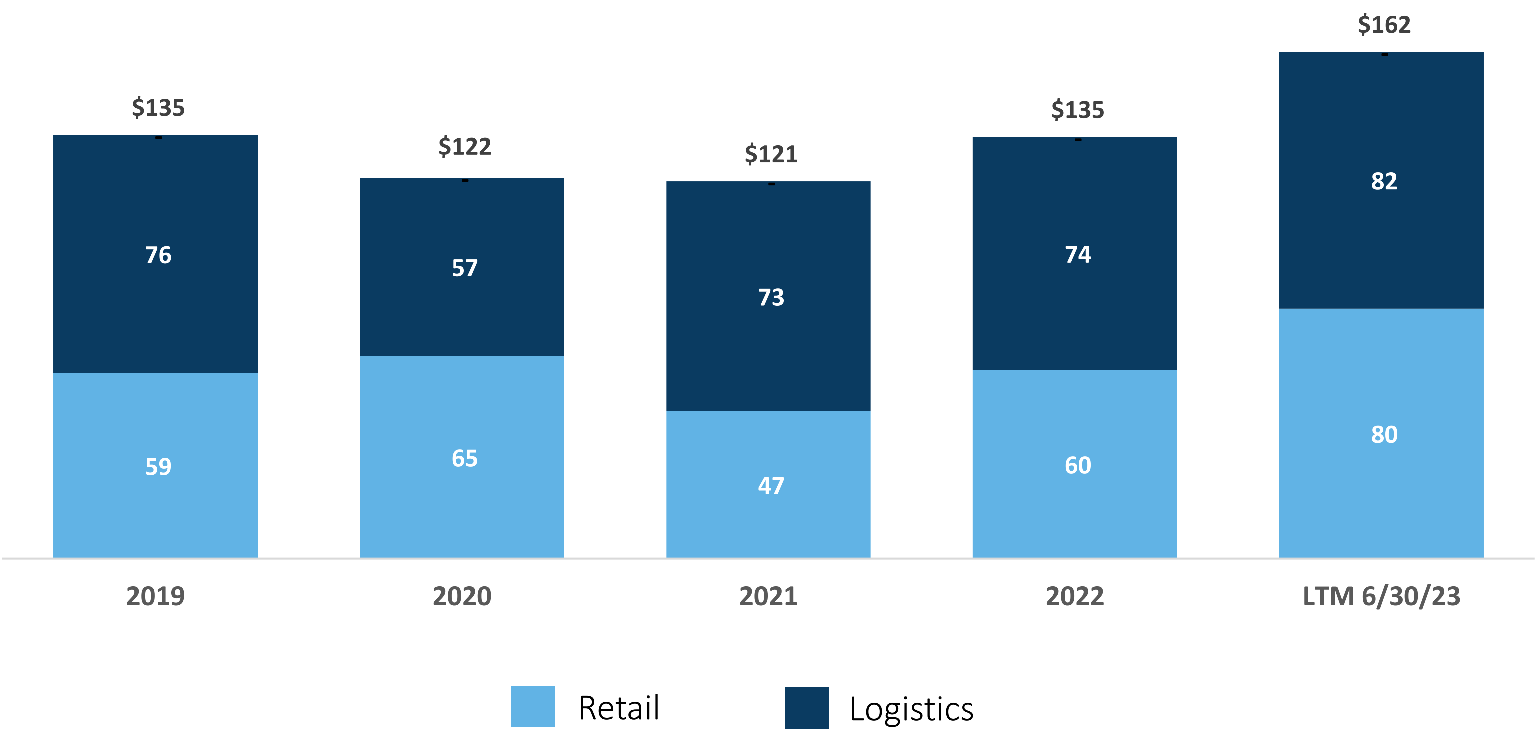


Steady Adjusted EBITDA Contribution Through Various Market Cycles

Chart in $ millions. See appendix for non-GAAP reconciliations.

Stable Contribution from Retail and Logistics Segments

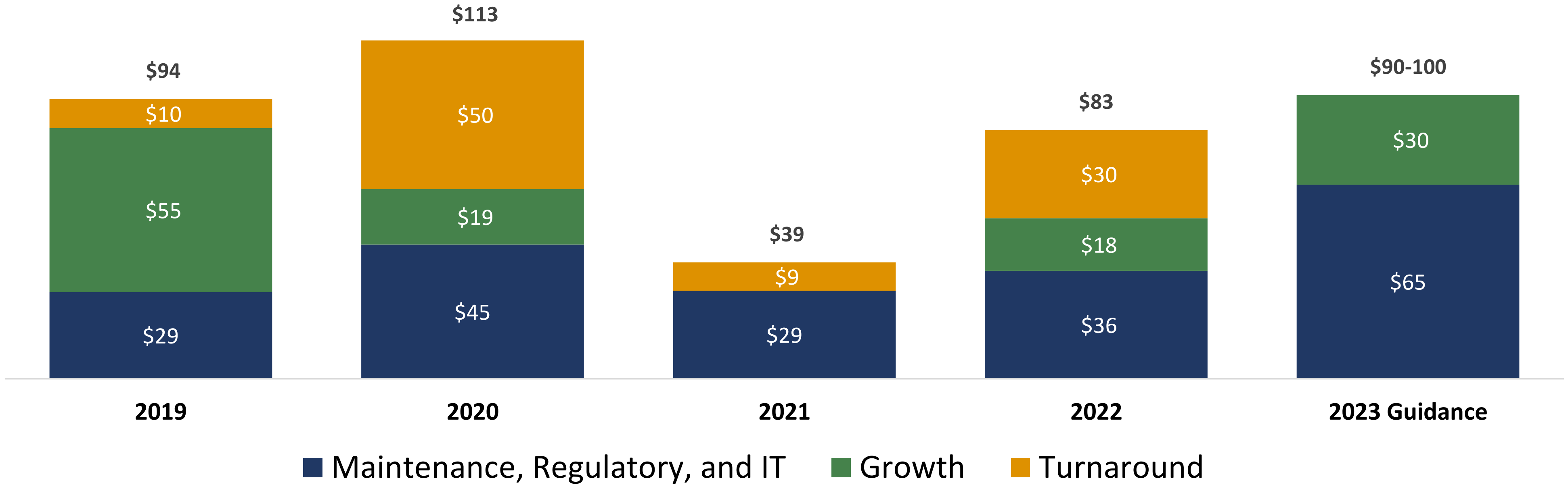
Trending Retail & Logistics Adj. EBITDA *($MM)*



Targeted gross term debt of $500-600 million fully supported by the stable cash flows of Retail & Logistics segments

See appendix for non-GAAP reconciliations.

Capital Expenditure and Turnaround Summary



Turnaround	Estimated Outlay	Cycle	Last Turnaround
Hawaii	$40 million	3-5 years	Q3 2020
Washington	$35 million	3-5 years	Q1 2022
Wyoming	$15 million	4-5 years	Q4 2020

Chart in $ millions. 2023 Guidance includes $10 million in growth capex for the Hawaii SAF project and $20 million in maintenance, regulatory, and IT capex related to Billings.

Energy Transition Strategy

Leverage local resources and policies to meet local needs

Short Term Opportunities

Washington Co-feed Project

- Opportunity to invest a small amount of capital and co-feed low carbon feedstocks like soybean or distillers corn oil at our Washington refinery
- Quickly actionable project which allows flexibility to toggle between renewables and hydrocarbons
- Less-than-$2 million capital project
- Unit start-up and trial runs in July 2023

Hawaii SAF

- Announced $90 million investment in Hawaii renewable fuels project
- Capital expenditures of < $1.50/gallon for a 61 mmgpy project including feedstock pre-treatment to produce approximately 60% SAF
- FTZ waiver allows project to benefit from some of the lowest-cost renewable feedstocks in the market
- Project expected to come online in 2025

Together, the Washington Co-Feed and Hawaii SAF Projects are expected to make Par Pacific a net RIN generator

Long Term Opportunities

Washington Hydrogen

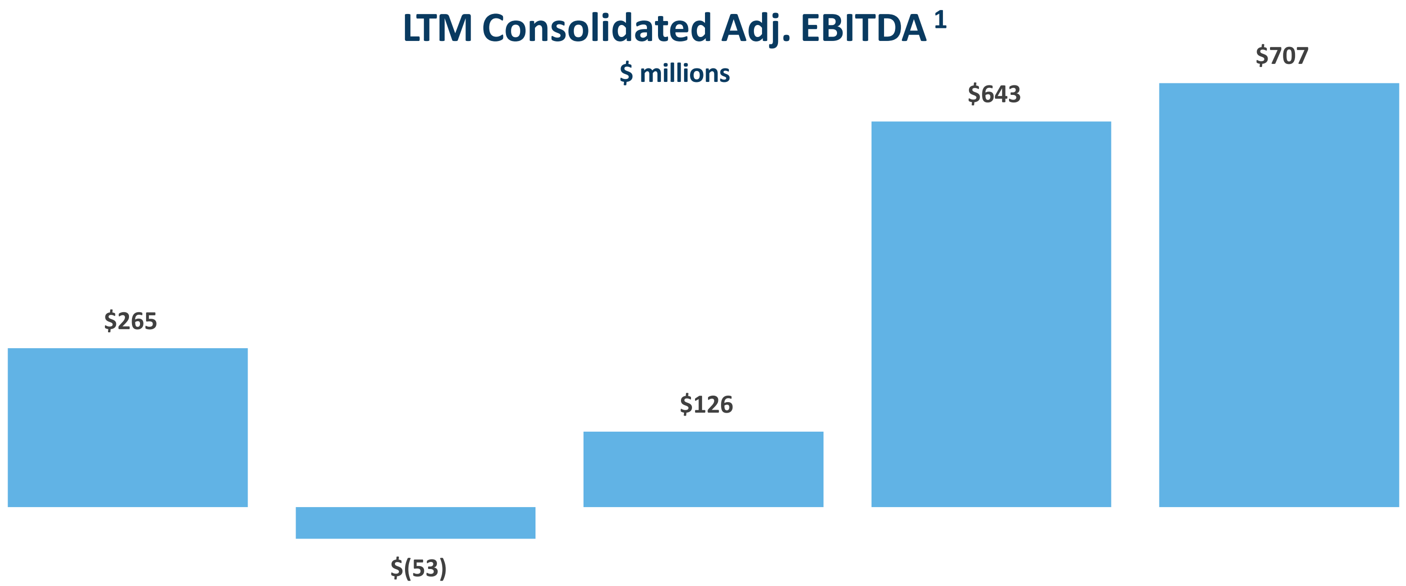
Washington SAF

Federal Inflation Reduction Act along with Washington LCFS and Cap & Trade programs provide incentives for decarbonization

- Low-cost hydroelectric power makes Tacoma an advantaged region to deploy electrolyzer technology and produce green hydrogen
- U.S. Oil's unique logistics infrastructure and positioning in the Port of Tacoma makes it a prime candidate within the region

- Assessing co-located SAF plant as anchor offtaker of green hydrogen to produce low carbon intensity jet fuel
- Expect to make final investment decision on hydrogen and SAF facilities in early 2024

Consistently Improving Credit Metrics



$ millions	12/31/2019	12/31/2020	12/31/2021	12/31/2022	6/30/2023
Total Secured Debt	$ 586	$ 683	$ 580	$ 515	$ 595
Total Unsecured Debt	49	49	-	-	-
Total Debt	**635**	**732**	**580**	**515**	**595**
Cash	126	68	112	491	191
Net Debt	**509**	**664**	**468**	**25**	**404**
Total Liquidity	**$ 241**	**$ 108**	**$ 179**	**$ 577**	**$ 464**

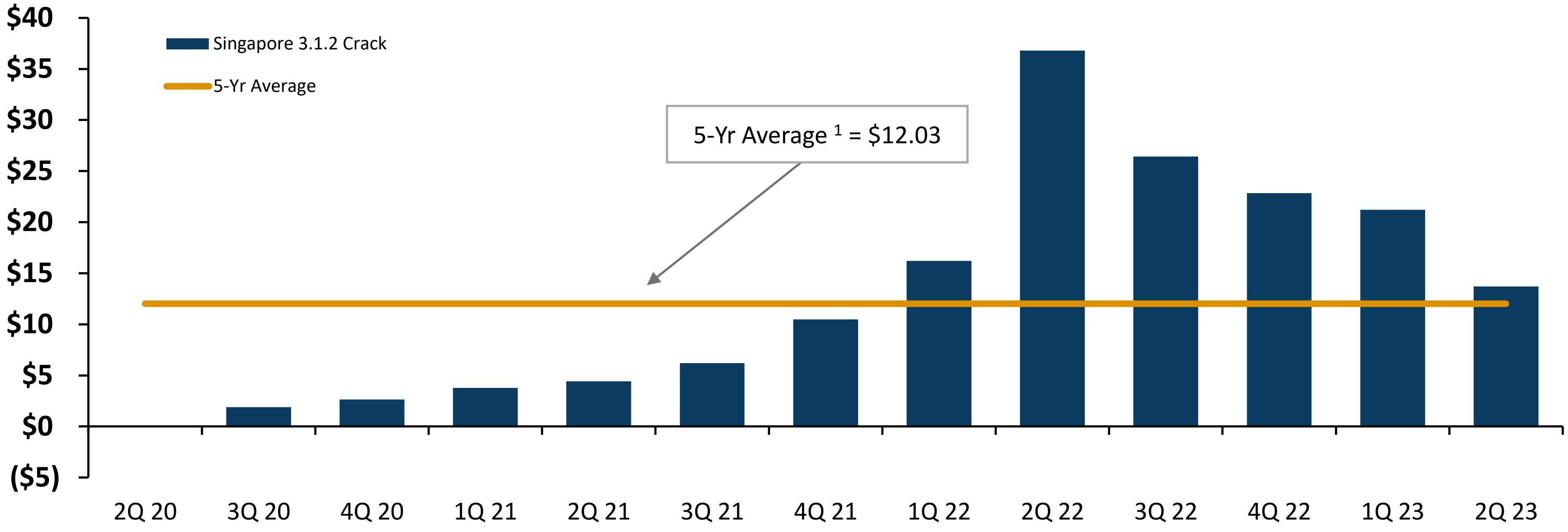
1. See appendix for non-GAAP reconciliations.

Company Highlights

1. Growth Profile Underpinned by Successful Acquisitions
2. Completed Strategic and Accretive Acquisition of Billings Assets
3. Portfolio of Valuable Opportunities to Drive Future Growth
4. Downside Protection from Diversified Businesses
5. Federal Tax Attributes Enhance Free Cash Flow
6. Strong Balance Sheet

Appendix

Singapore 3.1.2 Crack Spread

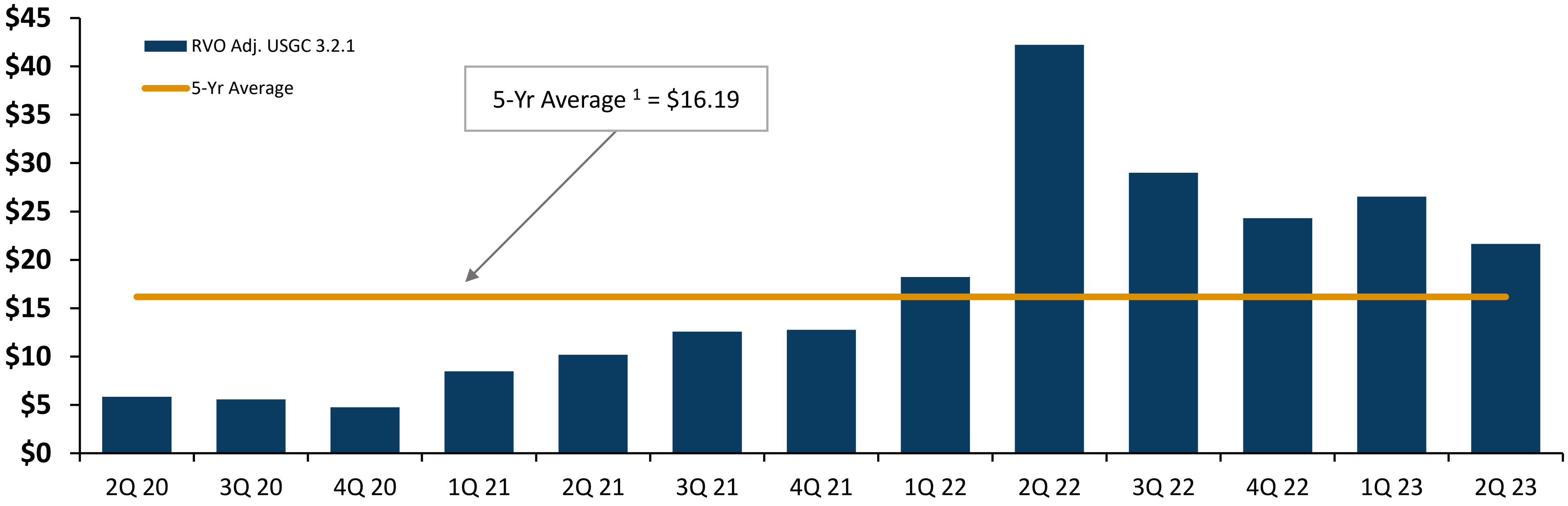


($/bbl)	2Q 20	3Q 20	4Q 20	1Q 21	2Q 21	3Q 21	4Q 21	1Q 22	2Q 22	3Q 22	4Q 22	1Q 23	2Q 23
Singapore 3.1.2 Crack	$0.01	$1.90	$2.63	$3.78	$4.42	$6.20	$10.49	$16.21	$36.80	$26.43	$22.84	$21.22	$13.72
Average Brent Price	$33.39	$43.34	$45.26	$61.32	$69.08	$73.23	$79.66	$97.90	$111.98	$97.70	$88.63	$82.10	$77.73

[1] Company calculation based on a rolling five-year quarterly average

We believe the 3-1-2 Singapore Crack Spread (or three barrels of Brent crude oil converted into one barrel of gasoline and two barrels of distillates (diesel and jet fuel)) is the most representative market indicator for our operations in Hawaii.

RVO Adjusted USGC 3.2.1 Index

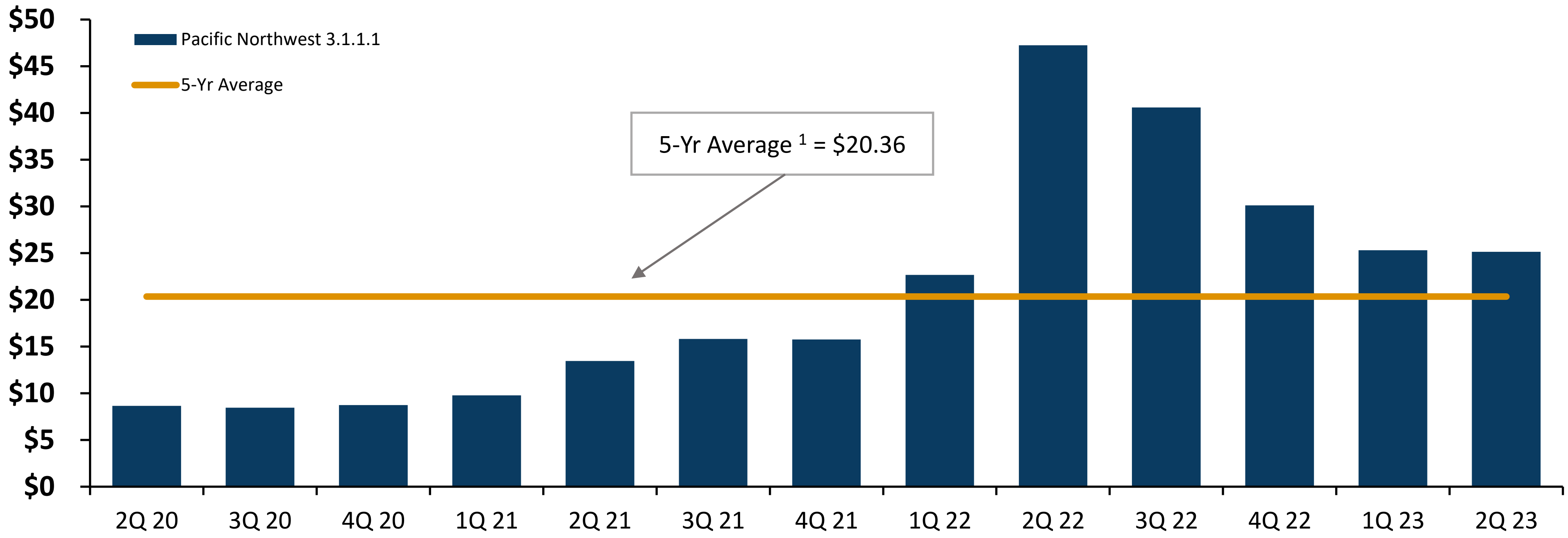


($/bbl)													
RVO Adj. USGC 3.2.1	$5.85	$5.58	$4.77	$8.49	$10.18	$12.57	$12.77	$18.24	$42.24	$29.01	$24.30	$26.55	$21.65
Average WTI Price	$28.00	$40.92	$42.70	$58.14	$66.17	$70.52	$77.10	$95.01	$108.52	$91.43	$82.64	$75.99	$73.56

[1] Company calculation based on a rolling five-year quarterly average

We believe the RVO Adjusted USGC 3.2.1 (or three barrels of WTI crude oil converted into two barrels of USGC gasoline and one barrel of USGC ULSD, less 100% of the RVO cost) is the most representative market indicator for our operations in Montana and Wyoming with improved historical correlations to our reported adjusted gross margin compared to prior reported indices.

RVO Adjusted PNW 3.1.1.1 Index

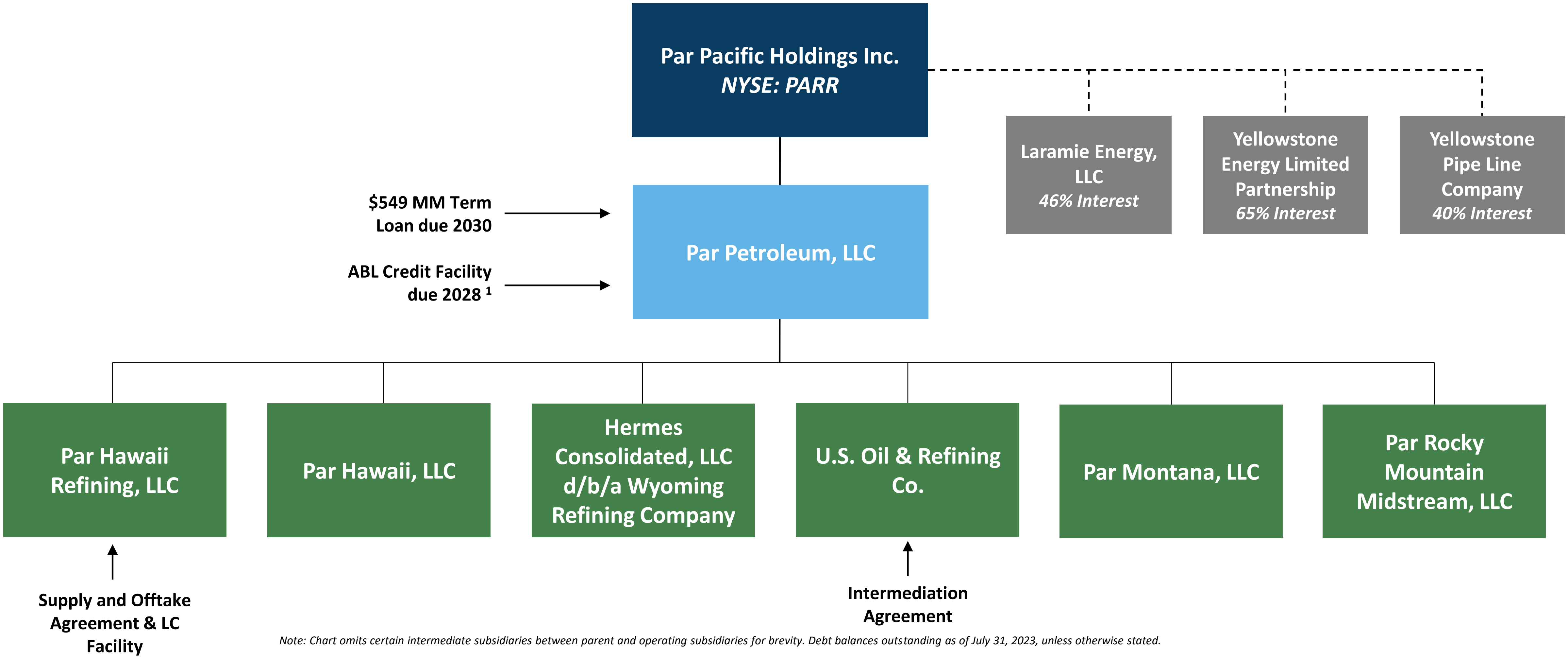


($/bbl)	2Q 20	3Q 20	4Q 20	1Q 21	2Q 21	3Q 21	4Q 21	1Q 22	2Q 22	3Q 22	4Q 22	1Q 23	2Q 23
Pacific Northwest 3.1.1.1	$8.67	$8.45	$8.73	$9.77	$13.46	$15.83	$15.76	$22.66	$47.23	$40.58	$30.11	$25.30	$25.13
Average WTI Price	$28.00	$40.92	$42.70	$58.14	$66.17	$70.52	$77.10	$95.01	$108.52	$91.43	$82.64	$75.99	$78.26

[1] Company calculation based on a rolling five-year quarterly average.

We believe the RVO Adjusted PNW 3.1.1.1 (or three barrels of WTI crude oil converted into one barrel of PNW gasoline, one barrel of PNW ULSD and one barrel of USGC VGO, less 100% of the RVO cost for gasoline and ULSD) is the most representative market indicator for our operations in Washington with improved historical correlations to our reported adjusted gross margin compared to prior reported indices.

Corporate Structure



Note: Chart omits certain intermediate subsidiaries between parent and operating subsidiaries for brevity. Debt balances outstanding as of July 31, 2023, unless otherwise stated.

1. $600 MM ABL Credit Agreement with a sublimit of $60 MM for swingline loans and a sublimit of $250 MM for the issuance of standby or commercial letters of credit. Co-borrowers are Par Petroleum, LLC, a Delaware limited liability company, Par Hawaii, LLC, a Delaware limited liability company, Hermes Consolidated, LLC (d/b/a Wyoming Refining Company), a Delaware limited liability company, Wyoming Pipeline Company LLC, a Wyoming limited liability company, Par Montana, LLC, a Delaware limited liability company, and Par Rocky Mountain Midstream, LLC, a Delaware limited liability company.

Non-GAAP Financial Measures

Twelve Months Ended Consolidated Adjusted EBITDA and Adjusted Net Income Reconciliation (1)

($ in thousands)

	2019	2020	2021	2022	Q2 2023
Net income (loss)	$ 40,809	$ (409,086)	$ (81,297)	$ 364,189	$ 620,018
Adjustments to Net Income (loss):					
Inventory valuation adjustment	19,436	9,994	31,841	(15,712)	(34,832)
Environmental credit mark-to-market adjustments	(4,804)	81,709	66,350	105,760	(108,048)
Unrealized loss (gain) on derivatives	8,988	(4,804)	1,517	9,336	30,999
Acquisition and integration costs	4,704	614	87	3,663	16,144
Par West operating and redevelopment costs	—	—	—	—	5,363
Debt extinguishment and commitment costs	11,587	—	8,144	5,329	17,339
Changes in valuation allowance and other deferred tax items (2)	(68,792)	(20,896)	—	—	—
Change in value of common stock warrants	3,199	(4,270)	—	—	—
Severance costs	—	512	84	2,272	1,079
Gain on sale of assets, net	—	—	(64,697)	(169)	(184)
Impairment expense	—	85,806	1,838	—	—
Impairments of Laramie Energy, LLC (3)	83,152	45,294	—	—	—
Par's share of Laramie Energy's unrealized loss (gain) on derivatives	(1,969)	(1,110)	—	—	—
Adjusted Net Income (Loss)	96,310	(216,237)	(36,133)	474,668	547,878
Depreciation and amortization	86,121	90,036	94,241	99,769	102,982
Interest expense and financing costs, net	74,839	70,222	66,493	68,288	64,899
Equity losses from Laramie Energy, LLC, excluding Par's share of unrealized loss (gain) on derivatives and impairment losses	8,568	2,721	—	—	(10,706)
Par's portion of interest, tax, and depreciation expense from investments	—	—	—	—	207
Income tax expense (benefit)	(897)	176	1,021	710	2,163
Adjusted EBITDA	**$ 264,941**	**$ (53,082)**	**$ 125,622**	**$ 643,435**	**$ 707,423**

(1) We believe Adjusted Net Income (Loss) and Adjusted EBITDA are useful supplemental financial measures that allow investors to assess: (1) The financial performance of our assets without regard to financing methods, capital structure or historical cost basis, (2) The ability of our assets to generate cash to pay interest on our indebtedness, and (3) Our operating performance and return on invested capital as compared to other companies without regard to financing methods and capital structure. Adjusted Net Income (Loss) and Adjusted EBITDA should not be considered in isolation or as a substitute for operating income (loss), net income (loss), cash flows provided by operating, investing and financing activities, or other income or cash flow statement data prepared in accordance with GAAP. Adjusted Net Income (Loss) and Adjusted EBITDA presented by other companies may not be comparable to our presentation as other companies may define these terms differently. Beginning with financial results reported for periods in fiscal year 2022, the inventory valuation adjustment was modified to include the first-in, first-out ("FIFO") inventory gains (losses) associated with our titled manufactured inventory in Hawaii. Beginning with financial results reported for the second quarter of 2022, Adjusted Net Income and Adjusted EBITDA also exclude the mark-to-market losses (gains) associated with our net RINs liability. Beginning with the financial results reported in the first quarter of 2023, Adjusted Net Income and Adjusted EBITDA also exclude the mark-to-market losses (gains) associated with our net Washington CCA liability and the redevelopment and other costs of our Par West facility. Beginning with financial results report for the second quarter of 2023, Adjusted Gross Margin, Adjusted Net Income (Loss), and Adjusted EBITDA also exclude our portion of interest, taxes, and depreciation expense from our refining and logistics investments. These modifications were made to better reflect our operating performance and to improve comparability between periods. Adjusted Net Income and Adjusted EBITDA have been recast for prior periods when reported to conform to the modified presentation. For the twelve months ended December 31, 2019, 2020, 2021, 2022, and March 31, 2023, there was no change in value of contingent consideration or LIFO liquidation adjustment.

(2) Includes increases in (releases of) our valuation allowance associated with business combinations and changes in deferred tax assets and liabilities that are not offset by a change in the valuation allowance. These tax expenses (benefits) are included in Income tax expense on our condensed consolidated statements of operations.

(3) Included in Equity earnings from Laramie Energy, LLC on our condensed consolidated statements of operations.

Non-GAAP Financial Measures

Consolidated Adjusted EBITDA by Segment Reconciliation (1)
For the twelve months ended June 30, 2023
($ in thousands)

	Refining	Logistics	Retail	Corporate and Other
Operating income (loss)	$ 658,704	$ 61,598	$ 68,362	$ (95,859)
Adjustments to operating income (loss):				
Depreciation and amortization	68,709	20,374	11,491	2,408
Par's portion of interest, taxes, and depreciation expense from refining and logistics investments	—	207	—	—
Inventory valuation adjustment	(34,832)	—	—	—
Environmental credit mark-to-market adjustments	(108,048)	—	—	—
Unrealized loss on derivatives	30,999	—	—	—
Acquisition and integration costs	—	—	—	16,144
Par West operating and redevelopment costs	—	—	—	5,363
Severance costs	—	9	—	1,070
Loss (gain) on sale of assets, net	1	(241)	56	—
Other income/expense	—	—	—	908
Adjusted EBITDA	$ 615,533	$ 81,947	$ 79,909	$ (69,966)

(1) Adjusted EBITDA by segment is defined as Operating income (loss) by segment excluding depreciation and amortization expense, inventory valuation adjustment (which adjusts for timing differences to reflect the economics of our inventory financing agreements, including lower of cost or net realizable value adjustments, the impact of the embedded derivative repurchase or terminal obligations, contango (gains) and backwardation losses associated with our Washington inventory and intermediation obligation, and purchase price allocation adjustments), the LIFO layer liquidation impacts associated with our Washington inventory, Environmental credit mark-to-market adjustments (which represents the income statement effect of reflecting our RINs liability and Washington net emissions liability on a net basis,), unrealized loss (gain) on derivatives, acquisition and integration costs, severance costs, loss (gain) on sale of assets, and impairment expense. Adjusted EBITDA by segment also includes Gain on curtailment of pension obligation and Other income (expense), net, which are presented below operating income (loss) on our condensed consolidated statements of operations. Beginning with financial results reported for periods in fiscal year 2022, the inventory valuation adjustment was modified to include the first-in, first-out ("FIFO") inventory gains (losses) associated with our titled manufactured inventory in Hawaii. Beginning with financial results reported for the second quarter of 2022, Adjusted Net Income and Adjusted EBITDA also exclude the mark-to-market losses (gains) associated with our net RINs liability. Beginning with the financial results reported in the first quarter of 2023, Adjusted Net Income and Adjusted EBITDA also exclude the mark-to-market losses (gains) associated with our net Washington CCA liability and the redevelopment and other costs of our Par West facility. Beginning with financial results report for the second quarter of 2023, Adjusted Gross Margin, Adjusted Net Income (Loss), and Adjusted EBITDA also exclude our portion of interest, taxes, and depreciation expense from our refining and logistics investments. This modification was made to better reflect our operating performance and to improve comparability between periods. Adjusted EBITDA by segment has been recast for prior periods when reported to conform to the modified presentation. Adjusted EBITDA by segment presented by other companies may not be comparable to our presentation as other companies may define these terms differently. For the twelve months ended June 30, 2023, there was no gain on curtailment of pension obligation or LIFO liquidation adjustment.

Non-GAAP Financial Measures

Consolidated Adjusted EBITDA by Segment Reconciliation (1)
For the twelve months ended December 31, 2022
($ in thousands)

	Refining	Logistics	Retail	Corporate and Other
Operating income (loss)	$ 401,901	$ 54,049	$ 49,238	$ (67,285)
Adjustments to operating income (loss):				
Depreciation and amortization	65,472	20,579	10,971	2,747
Inventory valuation adjustment	(15,712)	—	—	—
Environmental credit mark-to-market adjustments	105,760	—	—	—
Unrealized loss on derivatives	9,336	—	—	—
Acquisition and integration costs	—	—	—	3,663
Severance costs	40	13	22	2,197
Loss (gain) on sale of assets, net	1	(253)	56	27
Other income/expense	—	—	—	613
Adjusted EBITDA	**$ 566,798**	**$ 74,388**	**$ 60,287**	**$ (58,038)**

(1) Please read slide 20 for the definition of Adjusted EBITDA by segment used herein. For the twelve months ended December 31, 2022, there was no gain on curtailment of pension obligation or LIFO liquidation adjustment. Beginning with financial results reported for periods in fiscal year 2022, the inventory valuation adjustment was modified to include the first-in, first-out (“FIFO”) inventory gains (losses) associated with our titled manufactured inventory in Hawaii. Beginning with financial results reported for the second quarter of 2022 and first quarter of 2023, the RINs mark-to-market adjustments were modified to include the mark-to-market losses (gains) associated with our net RINs liability and net Washington emissions liability, respectively. This modification was made to better reflect our operating performance and to improve comparability between periods. Adjusted EBITDA by segment has been recast for prior periods when reported to conform to the modified presentation

Non-GAAP Financial Measures

Consolidated Adjusted EBITDA by Segment Reconciliation (1)
For the twelve months ended December 31, 2021
($ in thousands)

	Refining	Logistics	Retail	Corporate and Other
Operating income (loss)	$ (88,799)	$ 51,159	$ 81,249	$ (51,228)
Adjustments to operating income (loss):				
Depreciation and amortization	58,258	22,044	10,880	3,059
Inventory valuation adjustment	31,841	—	—	—
Environmental credit mark-to-market adjustments	66,350	—	—	—
Unrealized loss on derivatives	1,517	—	—	—
Acquisition and integration costs	—	—	—	87
Severance costs	61	23	—	—
Loss (gain) on sale of assets, net	(19,659)	(19)	(45,034)	15
Impairment expense	1,838	—	—	—
Gain on curtailment of pension obligation	1,802	228	2	—
Other income/expense	—	—	—	(52)
Adjusted EBITDA	**$ 53,209**	**$ 73,435**	**$ 47,097**	**$ (48,119)**

(1) Please read slide 20 for the definition of Adjusted EBITDA by segment used herein. Beginning in the third quarter of 2020, Adjusted EBITDA by segment excludes the LIFO layer liquidation impacts associated with our Washington inventory. There was no LIFO liquidation adjustment for the twelve months ended December 31, 2021. Beginning with financial results reported for periods in fiscal year 2022, the inventory valuation adjustment was modified to include the first-in, first-out ("FIFO") inventory gains (losses) associated with our titled manufactured inventory in Hawaii. Beginning with financial results reported for the second quarter of 2022 and first quarter of 2023, the RINs mark-to-market adjustments were modified to include the mark-to-market losses (gains) associated with our net RINs liability and net Washington emissions liability, respectively. This modification was made to better reflect our operating performance and to improve comparability between periods. Adjusted EBITDA by segment has been recast for prior periods when reported to conform to the modified presentation

Non-GAAP Financial Measures

Consolidated Adjusted EBITDA by Segment Reconciliation (1)
For the twelve months ended December 31, 2020
($ in thousands)

	Refining	Logistics	Retail	Corporate and Other
Operating income (loss)	$ (331,826)	$ 35,044	$ 24,211	$ (45,427)
Adjustments to operating income (loss):				
Depreciation and amortization	53,930	21,899	10,692	3,515
Inventory valuation adjustment	9,994	—	—	—
Environmental credit mark-to-market adjustments	81,709	—	—	—
Unrealized loss on derivatives	(4,804)	—	—	—
Acquisition and integration costs	—	—	—	614
Severance costs	312	8	—	192
Impairment expense	55,989	—	29,817	—
Other income/expense	—	—	—	1,049
Adjusted EBITDA	**$ (134,696)**	**$ 56,951**	**$ 64,720**	**$ (40,057)**

(1) Please read slide 20 for the definition of Adjusted EBITDA by segment used herein. Beginning in the third quarter of 2020, Adjusted EBITDA by segment excludes the LIFO layer liquidation impacts associated with our Washington inventory. There was no LIFO liquidation adjustment for the twelve months ended December 31, 2020. Beginning with financial results reported for periods in fiscal year 2022, the inventory valuation adjustment was modified to include the first-in, first-out ("FIFO") inventory gains (losses) associated with our titled manufactured inventory in Hawaii. Beginning with financial results reported for the second quarter of 2022 and first quarter of 2023, the RINs mark-to-market adjustments were modified to include the mark-to-market losses (gains) associated with our net RINs liability and net Washington emissions liability, respectively. This modification was made to better reflect our operating performance and to improve comparability between periods. Adjusted EBITDA by segment has been recast for prior periods when reported to conform to the modified presentation For the twelve months ended December 31, 2020, there was no gain on curtailment of post retirement medical plan obligation.

Non-GAAP Financial Measures

Consolidated Adjusted EBITDA by Segment Reconciliation (1)
For the twelve months ended December 31, 2019
($ in thousands)

	Refining	Logistics	Retail	Corporate and Other
Operating income (loss)	$ 93,781	$ 59,075	$ 49,245	$ (54,121)
Adjustments to operating income (loss):				
Depreciation and amortization	55,832	17,017	10,035	3,237
Inventory valuation adjustment	19,436	—	—	—
Environmental credit mark-to-market adjustments	(4,804)	—	—	—
Unrealized loss on derivatives	8,988	—	—	—
Acquisition and integration costs	—	—	—	4,704
Other income/expense	—	—	—	2,516
Adjusted EBITDA	**$ 173,233**	**$ 76,092**	**$ 59,280**	**$ (43,664)**

(1) Please read slide 20 for the definition of Adjusted EBITDA by segment used herein. Beginning with financial results reported for periods in fiscal year 2022, the inventory valuation adjustment was modified to include the first-in, first-out ("FIFO") inventory gains (losses) associated with our titled manufactured inventory in Hawaii. Beginning with financial results reported for the second quarter of 2022 and first quarter of 2023, the RINs mark-to-market adjustments were modified to include the mark-to-market losses (gains) associated with our net RINs liability and net Washington emissions liability, respectively. This modification was made to better reflect our operating performance and to improve comparability between periods. Adjusted EBITDA by segment has been recast for prior periods when reported to conform to the modified presentation For the twelve months ended December 31, 2019, there was no severance costs, impairment expense, or gain on curtailment of post retirement medical plan obligation.

Non-GAAP Financial Measures

Diluted Adjusted Net Income per Share for the Twelve Months Ended
(in thousands, except per share amounts)

	2019	2020	2021	2022	Q2 2023
Adjusted Net Income (Loss)	96,311	(216,237)	(36,133)	$ 474,668	$ 547,878
Undistributed Adjusted Net Income allocated to participating securities (1)	1,033	—	—	—	—
Adjusted Net Income (Loss) attributable to common stockholders	95,278	(216,237)	(36,133)	474,668	547,878
Plus: effect of convertible securities	8,978	—	—	—	—
Numerator for diluted Adjusted Net Income (Loss) per common share	$ 104,256	$ (216,237)	$ (36,133)	$ 474,668	$ 547,878
Basic weighted-average common stock shares outstanding	50,352	53,295	58,268	59,544	59,942
Add dilutive effects of common stock equivalents (2)	5,240	—	—	339	624
Diluted weighted-average common stock shares outstanding	55,592	53,295	58,268	59,883	60,566
Basic Adjusted Net Income (Loss) per common share	$ 1.89	$ (4.06)	$ (0.62)	$ 7.97	$ 9.14
Diluted Adjusted Net Income (Loss) per common share	$ 1.88	$ (4.06)	$ (0.62)	$ 7.93	$ 9.05

(1) Participating securities include restricted stock that has been issued but had not yet vested. These shares vested during the year ended December 31, 2019.

(2) Entities with a net loss from continuing operations are prohibited from including potential common shares in the computation of diluted per share amounts. We have utilized the basic shares outstanding to calculate both basic and diluted Adjusted Net Loss per common share for the twelve months ended December 31, 2021 and December 31, 2022.