
October 5, 2022

O&G Macro Update

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I. Energy Macro Update

High But Volatile Commodity Prices

Commodity prices remain high, but have been volatile given macro economic and political events

- Recent geopolitical tensions in Eastern Europe have caused supply disruptions which helped push prices to decade highs in the second quarter
- Expectations are growing that a U.S. and global recession (has it started?) will curtail demand in second half of 2022 and 2023

WTI Oil Price Summary⁽¹⁾



U.S. Natural Gas Price Summary⁽¹⁾

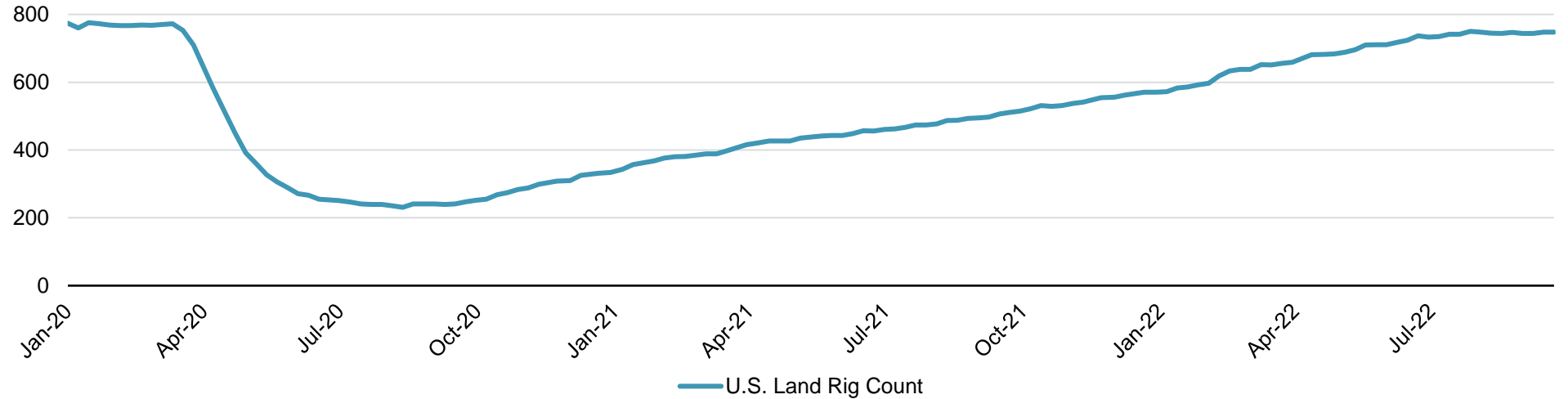


1) Source: Bloomberg. As of September 28, 2022

U.S. Energy Activity Levels Have Strengthened

U.S. Land Rig Count⁽¹⁾

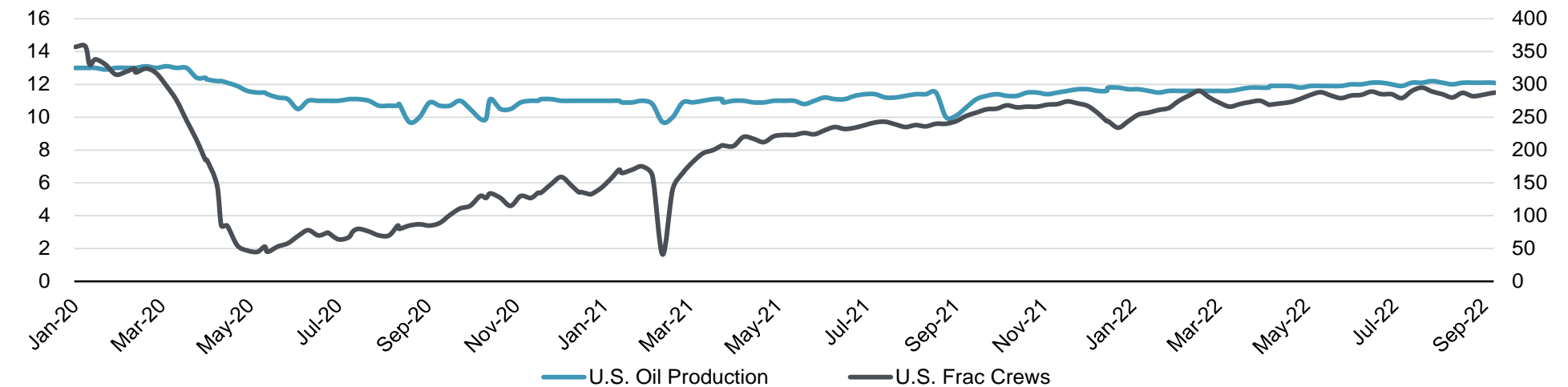
(Number of rigs)



U.S. Frac Crews and Crude Oil Production⁽²⁾

(MMBbls/d)

(Crew count)



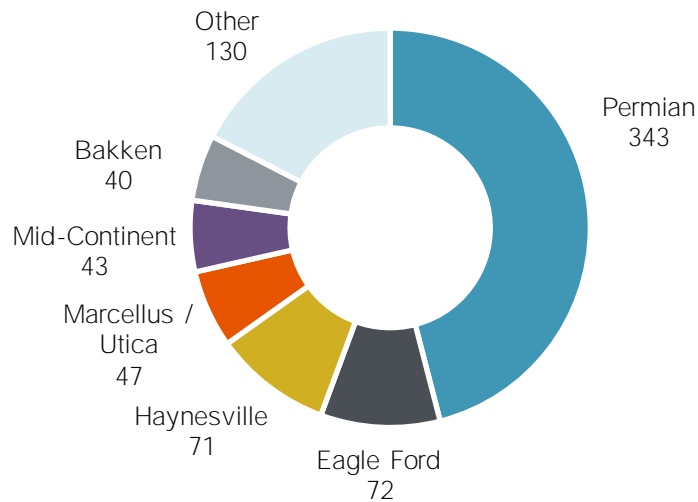
1) Source: Baker Hughes as of September 23, 2022

2) Source: Bloomberg as of September 28, 2022

Permian Leads the Industry Recovery

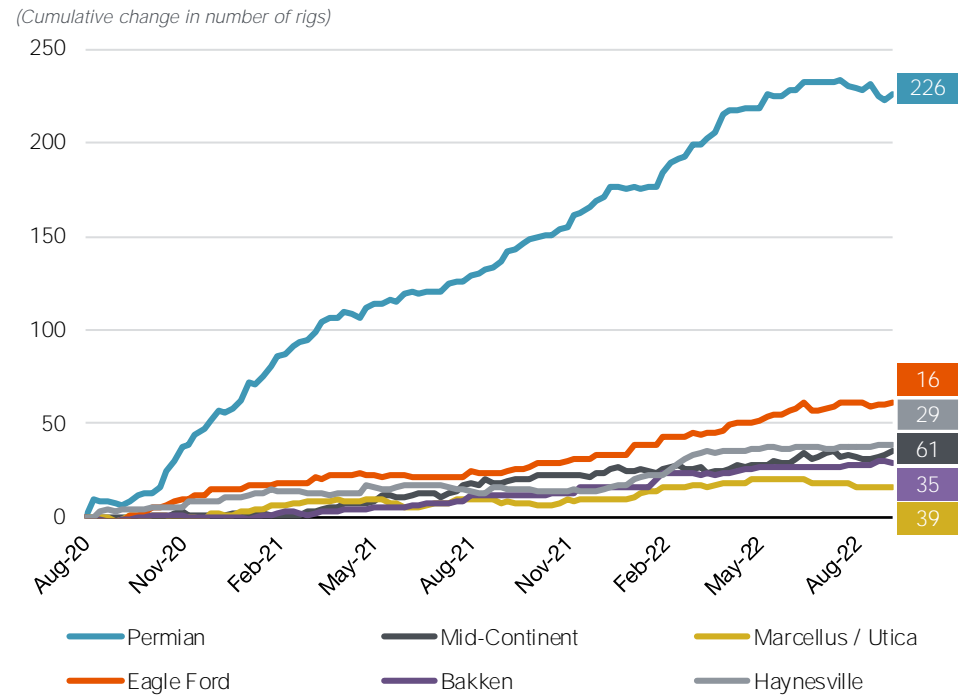
- The Permian has continued to remain the country's most economic unconventional basin and alone accounts for 46% of active land rigs in the U.S.
 - Since trough levels in August 2020, rig count in the Permian basin has increased nearly 193%
 - Permian rig count is still 30% lower than its recent peak in November 2018

Current U.S. Land Rig Count by Basin⁽¹⁾



Total U.S. Land Rig Count: 748

U.S. Land Rig Count Change by Basin Since August 14, 2020⁽¹⁾

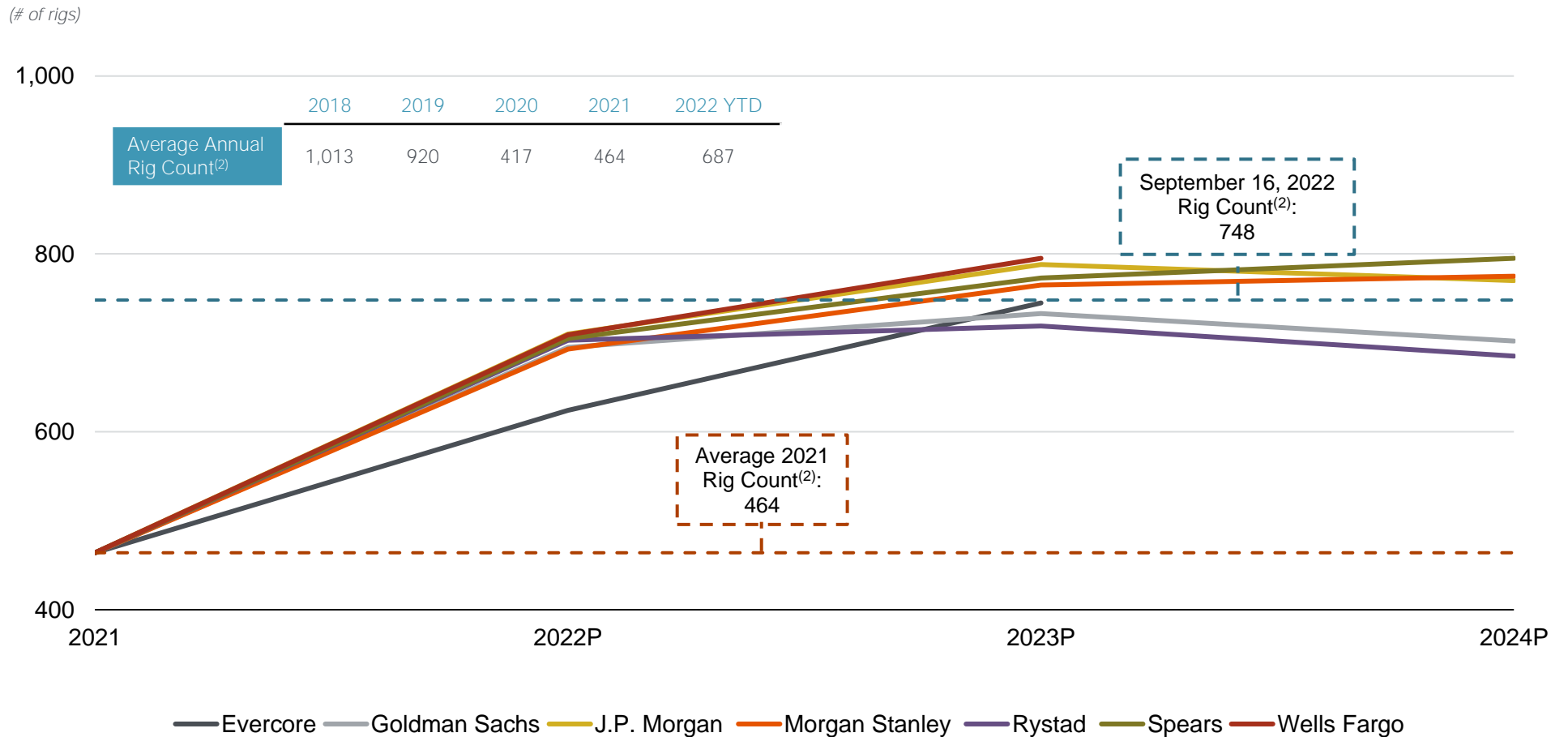


1) Source: Baker Hughes. As of September 16, 2022

Comparative U.S. Land Rig Count Projections

- Analysts are projecting continued rig count growth in 2023. Potential upside to these projections is possible given current commodity price situation despite E&Ps proclaiming continued capital discipline

2021 – 2024P U.S. Land Rig Count Projections⁽¹⁾



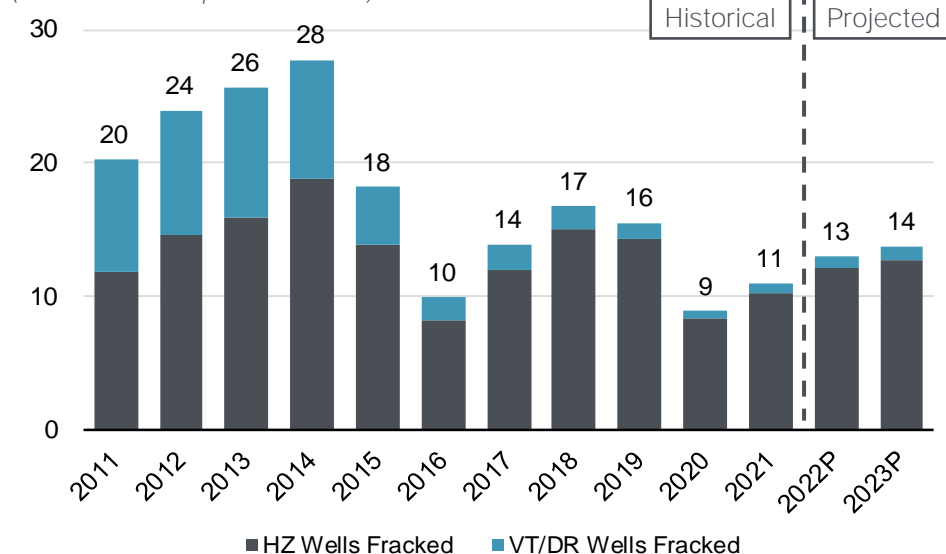
1) Source: Wall Street research
 2) Source: Baker Hughes

U.S. Land D&C Activity Is Projected to Increase

- Annual U.S. wells completed are projected to grow at an annualized rate of 13% from 2021 to 2023P
- Rising U.S. oil and gas activity is supported by the significant resource potential, attractive breakeven economics and short-cycle flexibility provided by unconventional geological plays, including the Permian, Bakken and Eagle Ford basins

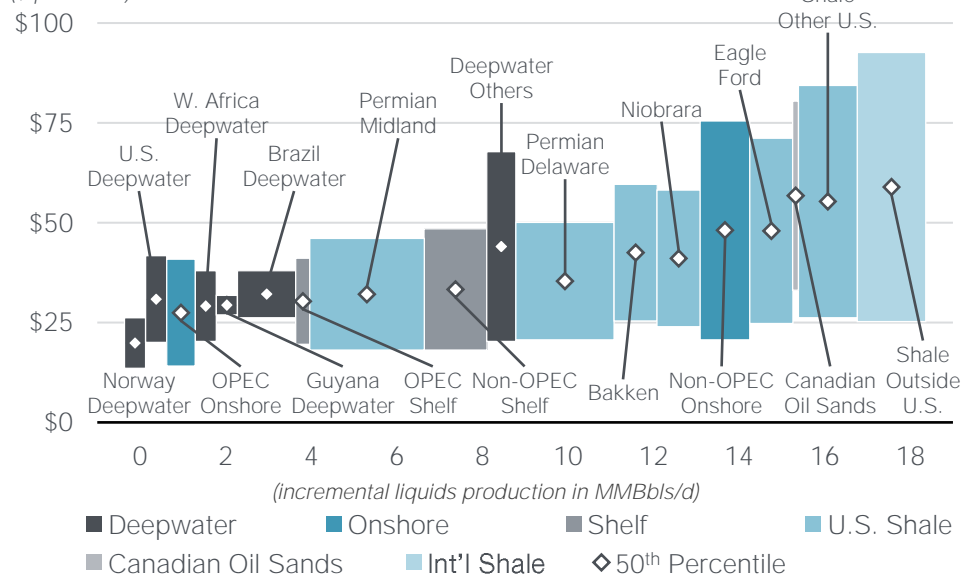
U.S. Land Wells Completed⁽¹⁾

(Wells fracked and spud in thousands)



Global Brent Crude Oil Breakevens by Geography⁽²⁾

(\$ per barrel)



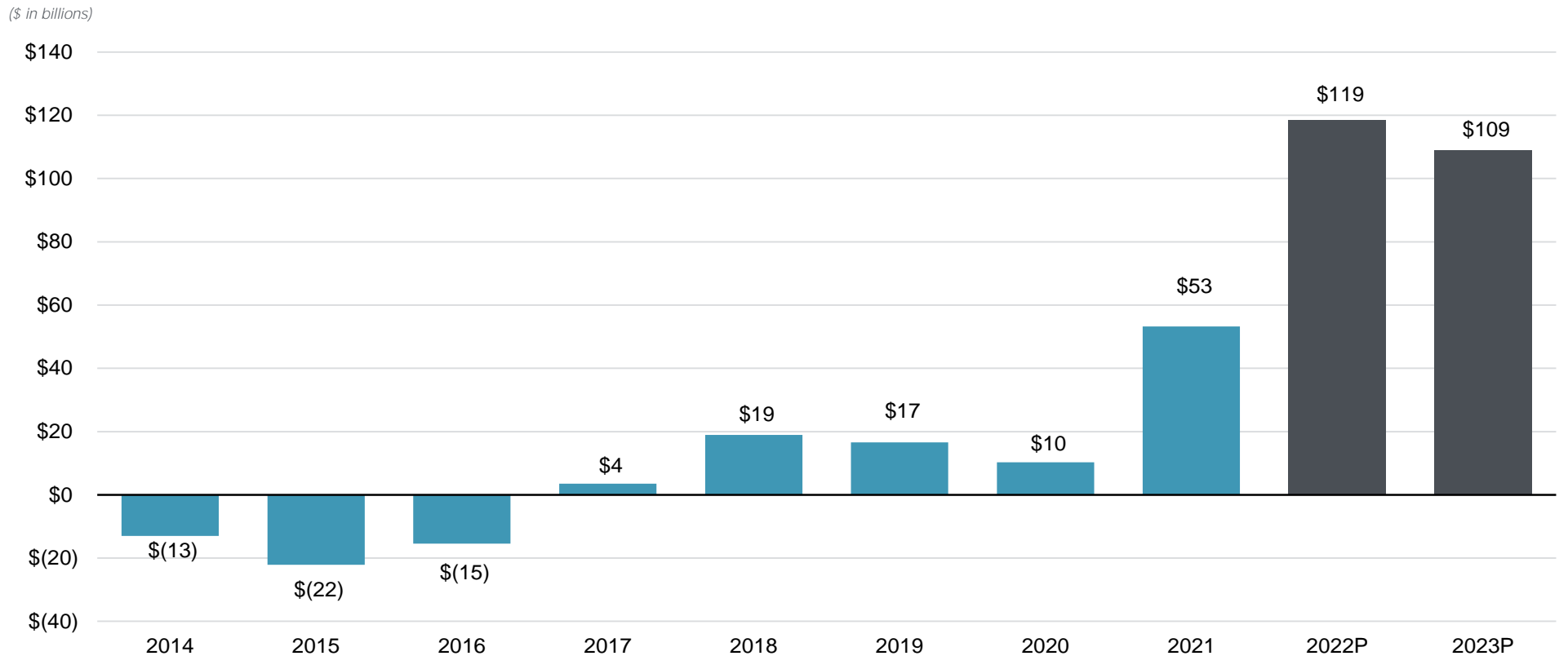
1) Source: Rystad Activity Metrics Report. As of June 2022

2) McKinsey Energy Insights, reflects the reference case, as of January 2021; L.E.K. Consulting as of July 2021

Upstream Cash Flows Are at a Record⁽¹⁾

- U.S. exploration and production free cash flows increased 212% from 2019 to 2021 and are projected to double in 2022

U.S. Exploration & Production – Aggregate EBITDA Less Capex⁽²⁾⁽³⁾



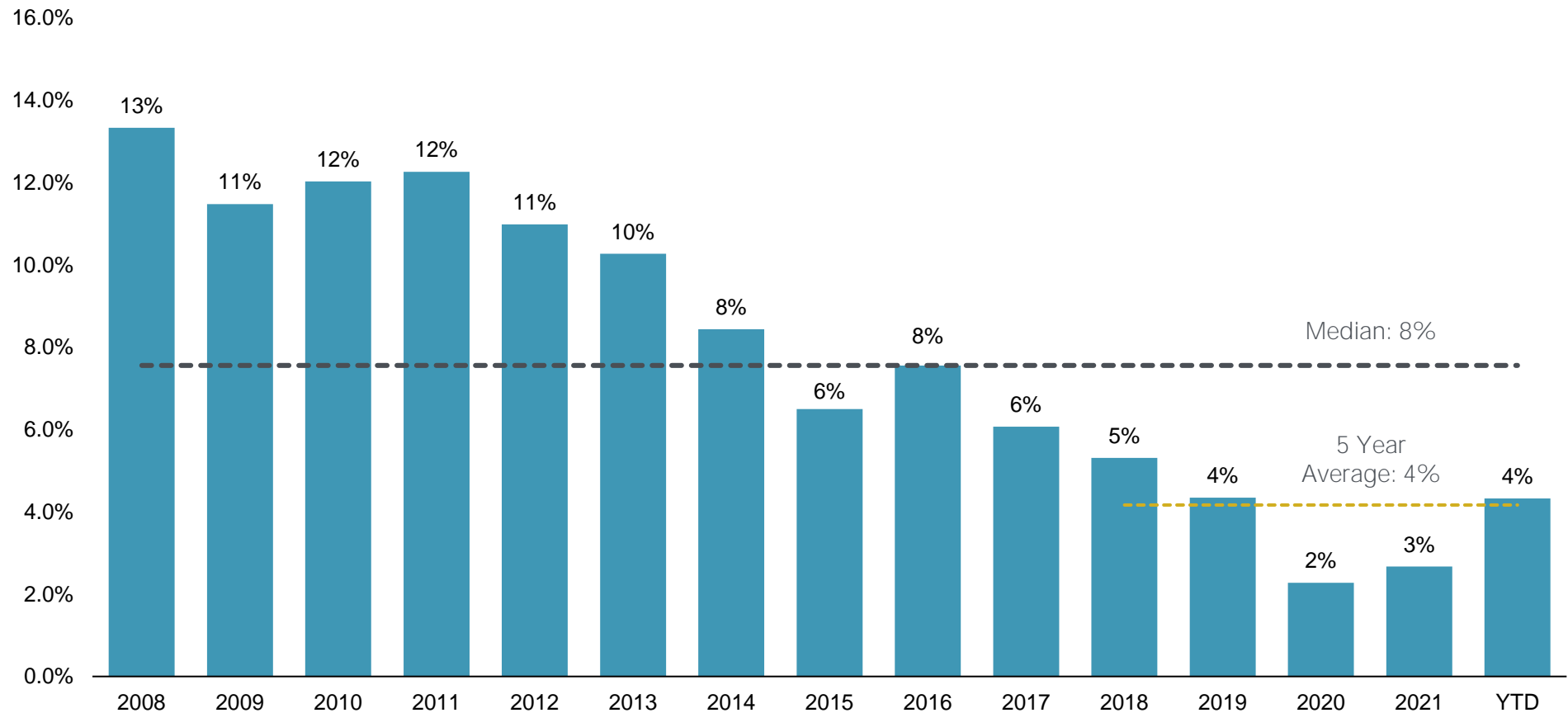
1) Source: Capital IQ. As of September 28, 2022

2) Companies include: Antero, APA, Chesapeake, ConocoPhillips, Continental, Coterra, Devon, Diamondback, EOG, EQT, Hess, Marathon, Occidental, Ovintiv and Pioneer

3) Adjusted retroactively for acquisitions

Energy Remains Under Weighted but Recovered from Recent Lows

Energy Sector S&P 500 Weighting Since 2008⁽¹⁾

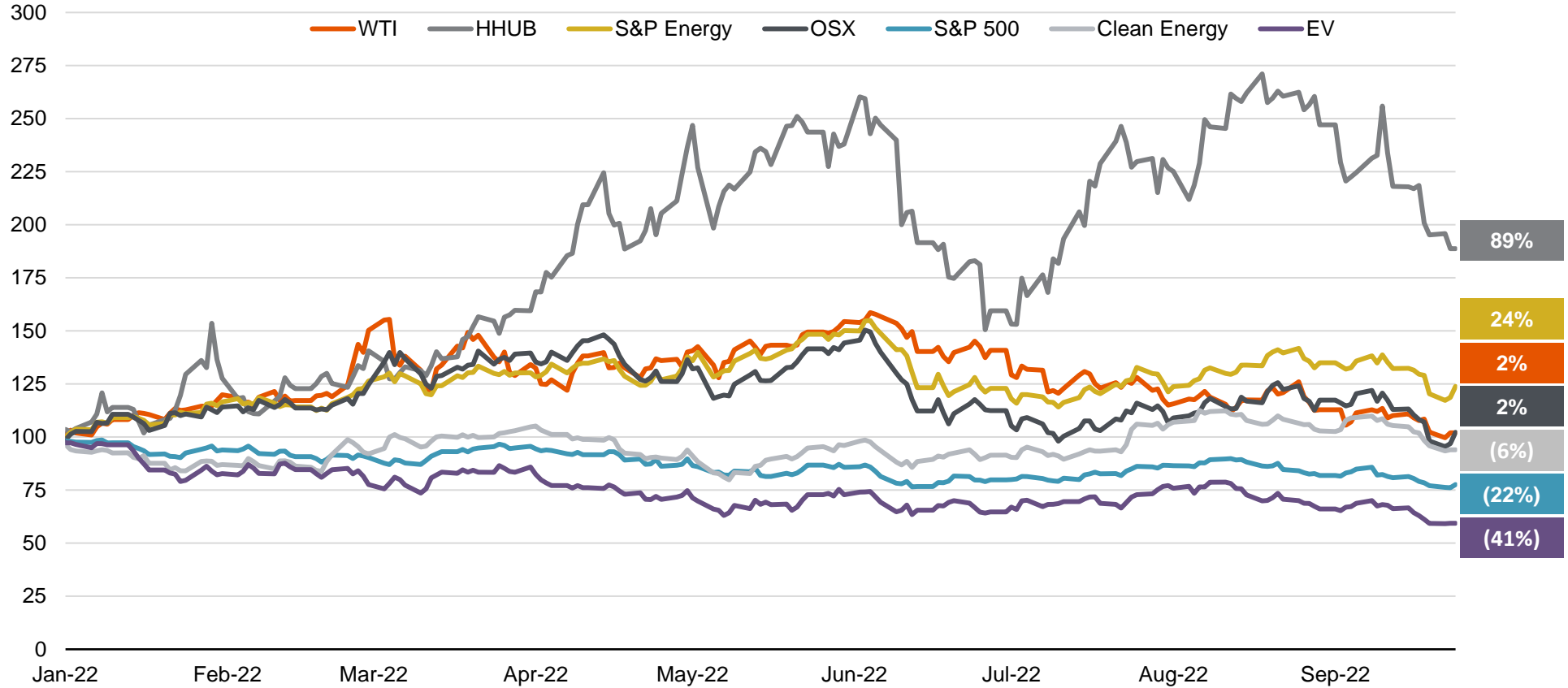


1) Source: Capital IQ. Piper Sandler calculated weighting. As of September 28, 2022

Oil & Gas Has Outperformed Since Beginning of 2022

YTD 2022 Energy Market Performance⁽¹⁾

(Indexed to 100 on January 1, 2022)

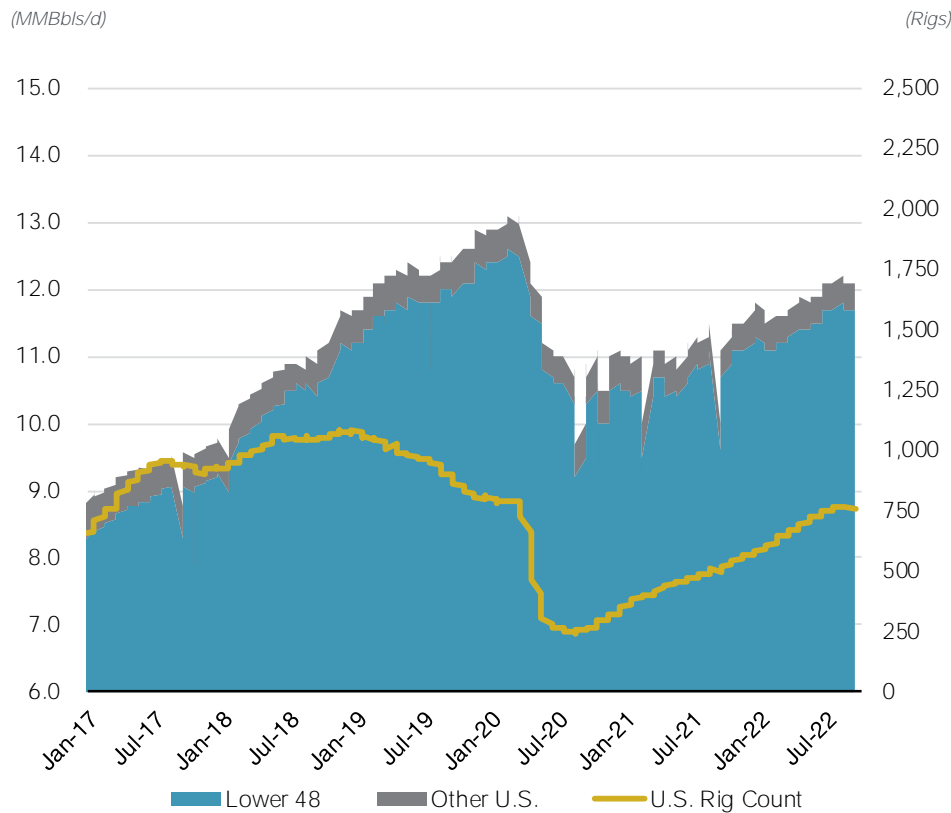


1) Capital IQ. As of September 28, 2022

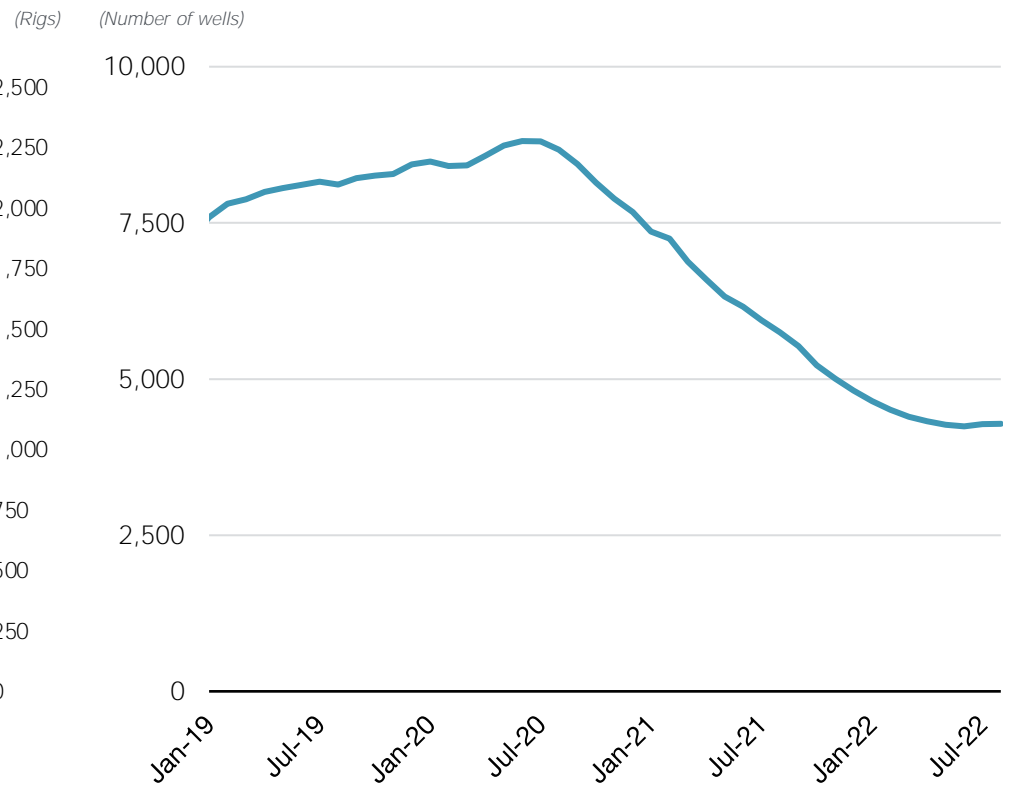
U.S. Crude Oil Production Is Still Below March 2020 Highs

- U.S. production peaked at 13.1 MMBbbls/d in March 2020, then troughed at 9.7 MMBbbls/d in August 2020, and has since increased to 12.1 MMBbbls/d in August 2022⁽¹⁾
- U.S. production has increased 0.6 MMBbbls/d since August 2021

U.S. Crude Oil Production⁽¹⁾⁽²⁾



U.S. Drilled but Uncompleted Wells⁽³⁾

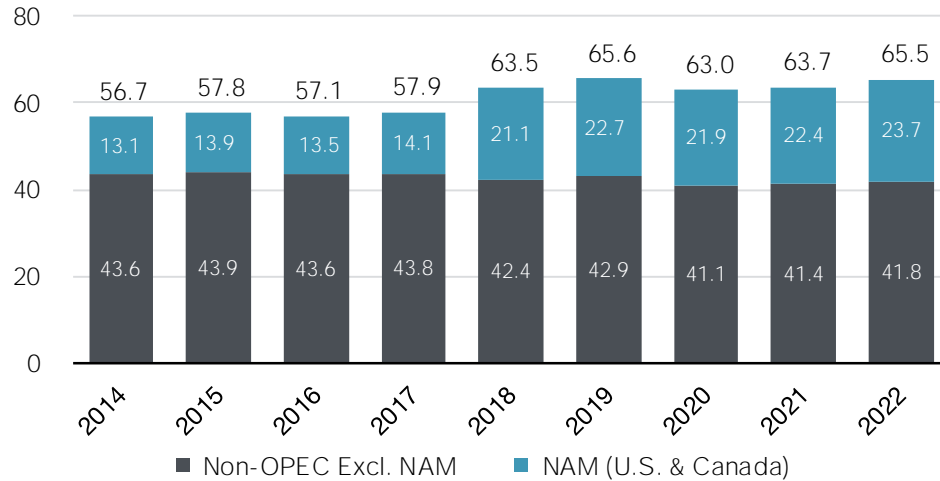


1) Source: EIA. As of September 9, 2022
 2) Source: Baker Hughes. As of September 9, 2022
 3) Source: EIA. As of August 2022

Data Points To A More Sustainable Run For Oil

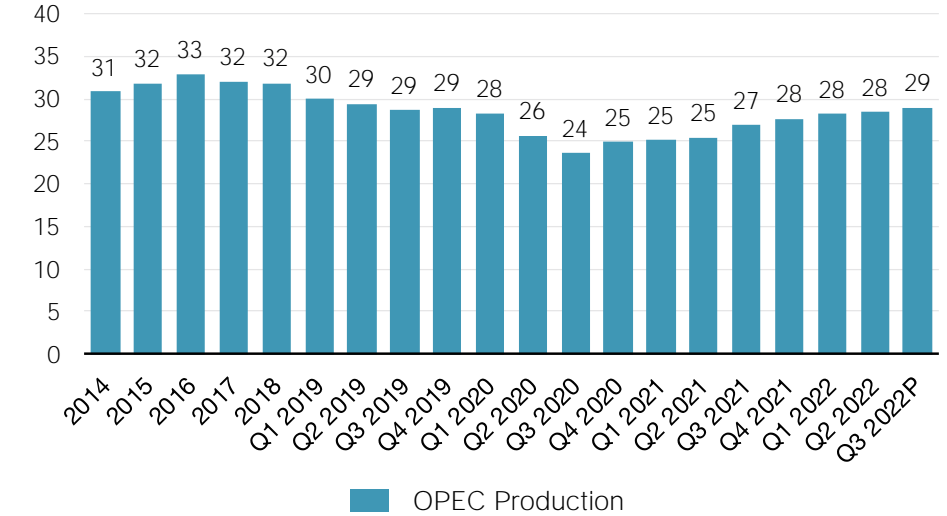
Non-OPEC Oil Supply Since 2014

(MMBbls/d)

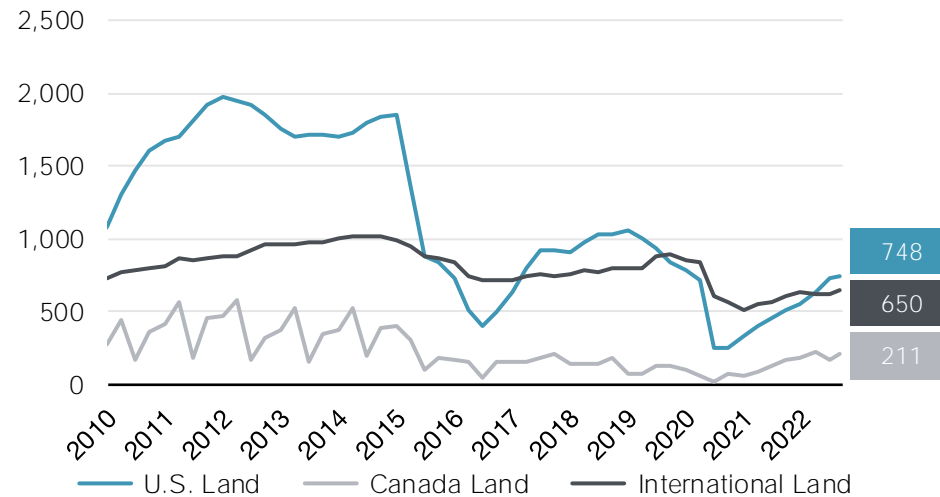


OPEC Crude Oil Supply Since 2014

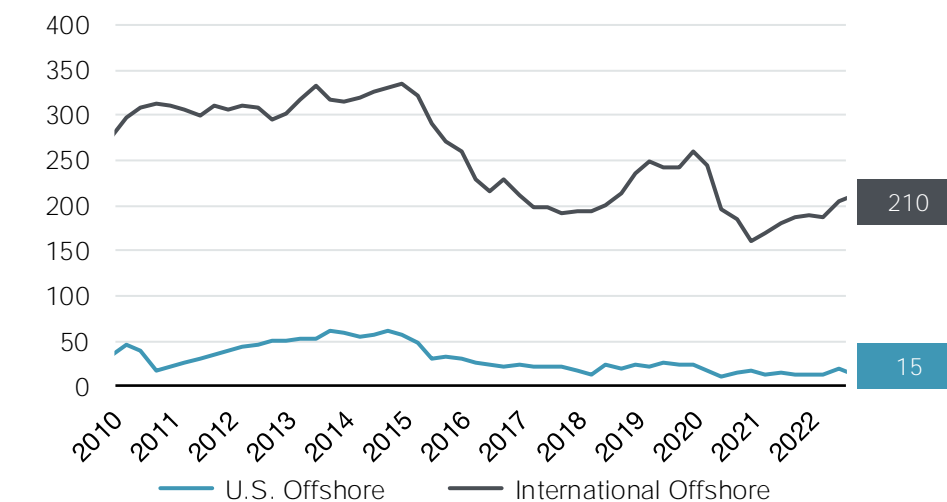
(OPEC Production (MMBbls/d))



Global Land Rig Count Since 2010



Global Offshore Rig Count Since 2010



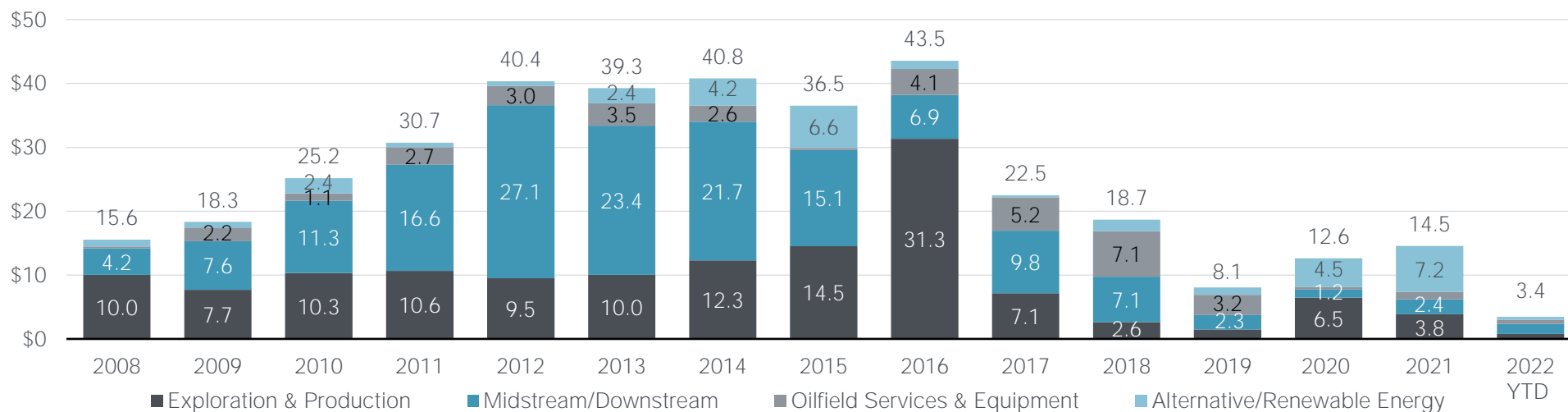
Source: IEA; EIA; OPEC; Piper Sandler Research; Baker Hughes as of September 20, 2022

II. Capital Markets and M&A Review

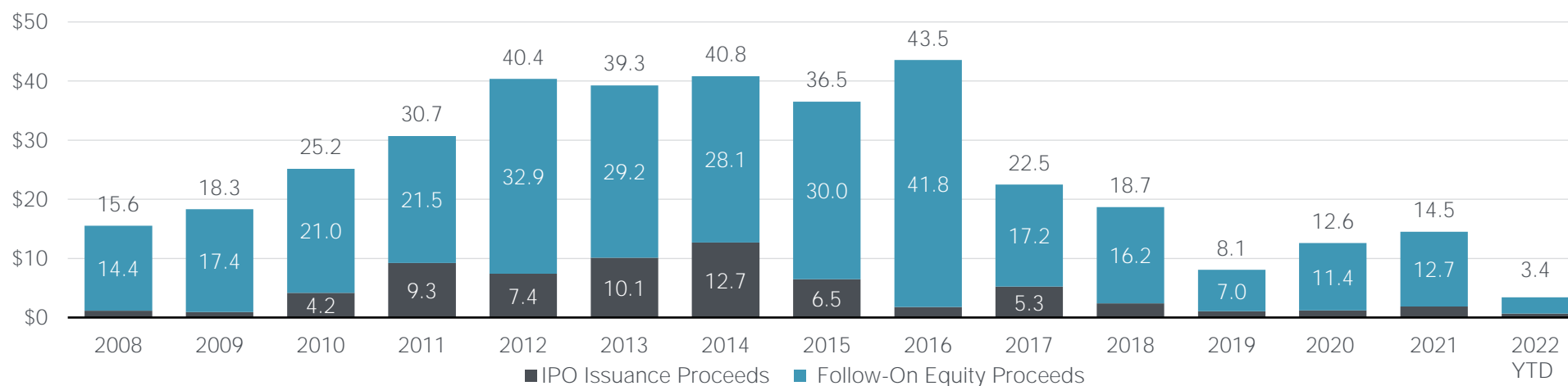
U.S. Energy Equity Issuance

(\$ in billions)

Equity Issuances by Vertical



Issuances by Type

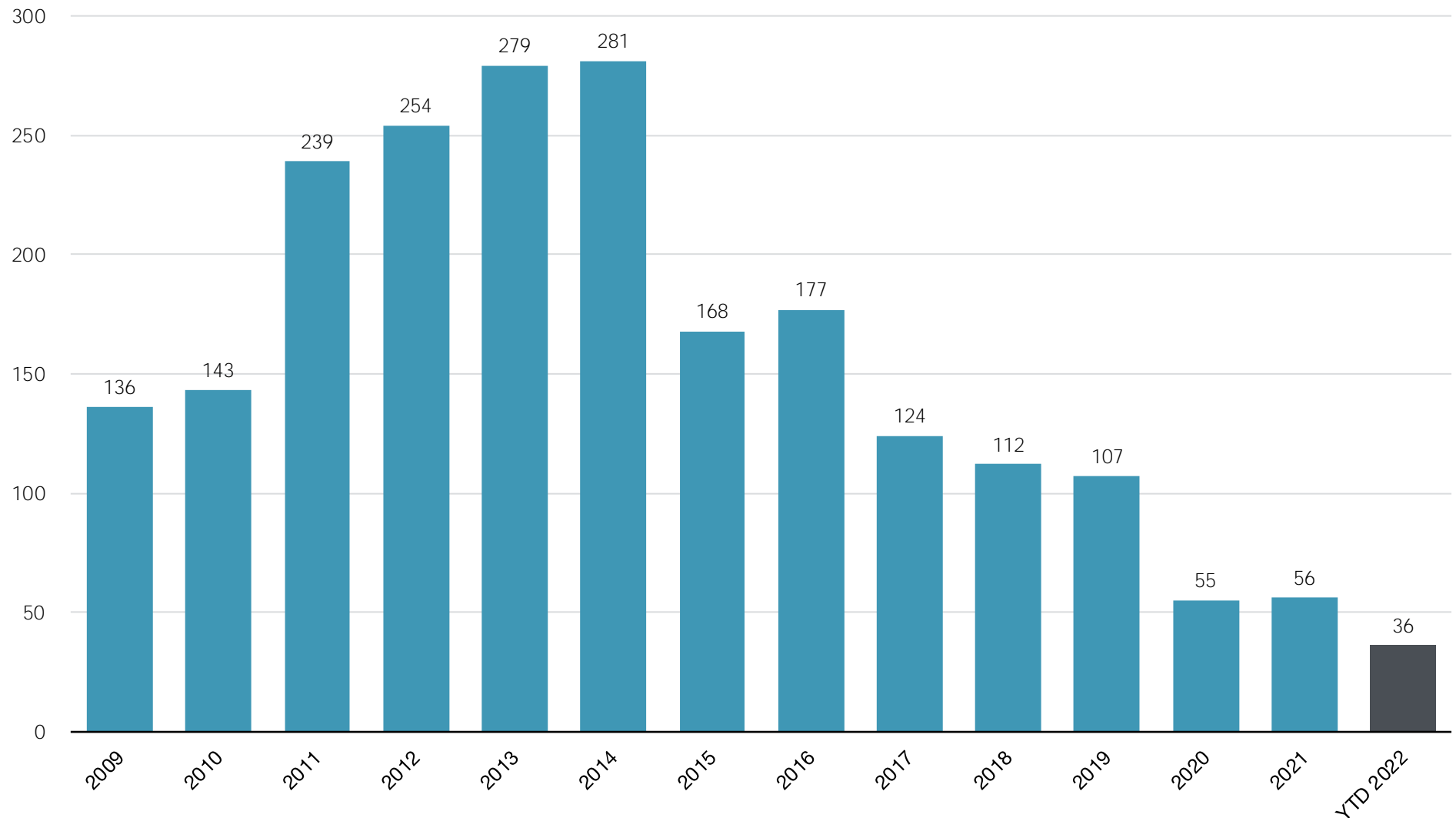


Note: Excludes convertible offerings
Source: Piper Sandler; Dealogic as of July 17, 2022

Energy M&A Activity Remains Depressed But Is Improving

Global Annual Oil Service M&A Transactions: 2008 – 2022 YTD⁽¹⁾

(Number of transactions)



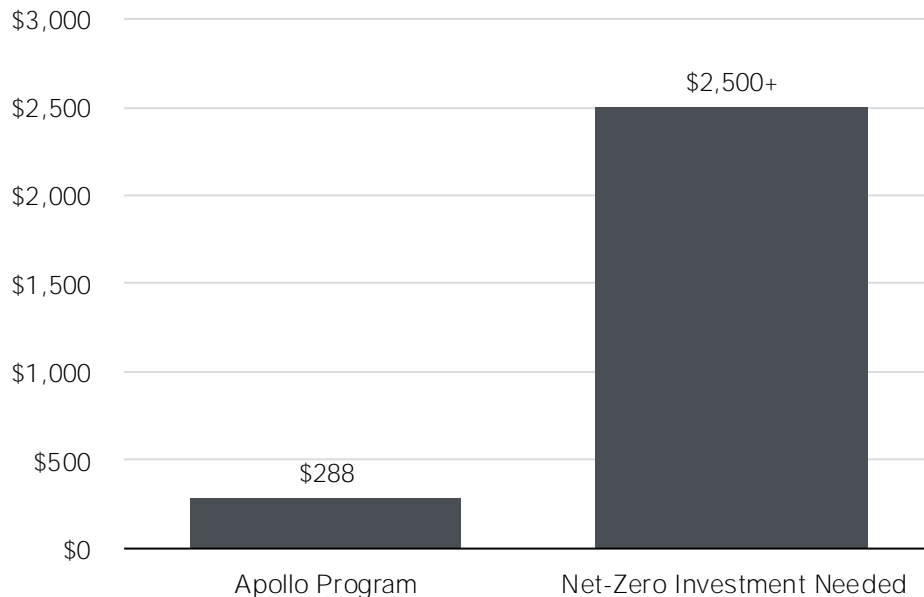
1) Source: Piper Sandler database with immaterial transactions eliminated. Year based on announced date. As of September 28, 2022

Trillions of Capital Investment Needed to Address Climate Change

- To achieve net-zero emissions by 2050, the U.S. “will require immediate, large-scale mobilization of capital, policy and societal commitment, including at least \$2.5 trillion in additional capital investment...over the next decade relative to business as usual”⁽¹⁾
 - For comparison, during the Apollo program to put men on the moon, NASA invested \$28 billion between 1960 and 1973, or \$288 billion in inflation-adjusted dollars⁽²⁾

Addressing Climate Change Requires 9x the Capital Investment as the Moon Landing⁽¹⁾⁽²⁾

(Billion dollars, inflation-adjusted)



“Surprising” and “Staggering” Amount of Investment Needed to Address Climate Change⁽³⁾

“The scale of what we have to build in a very short time frame surprised me. We can do this, we can afford this, but now it’s time to roll up our sleeves and figure out how to get it done.”

Christopher Greig, Princeton Senior Scientist

“If the United States wants to get serious about tackling climate change, the country will need to build a staggering amount of new energy infrastructure in just the next 10 years, laying down steel and concrete at a pace barely being contemplated today.”

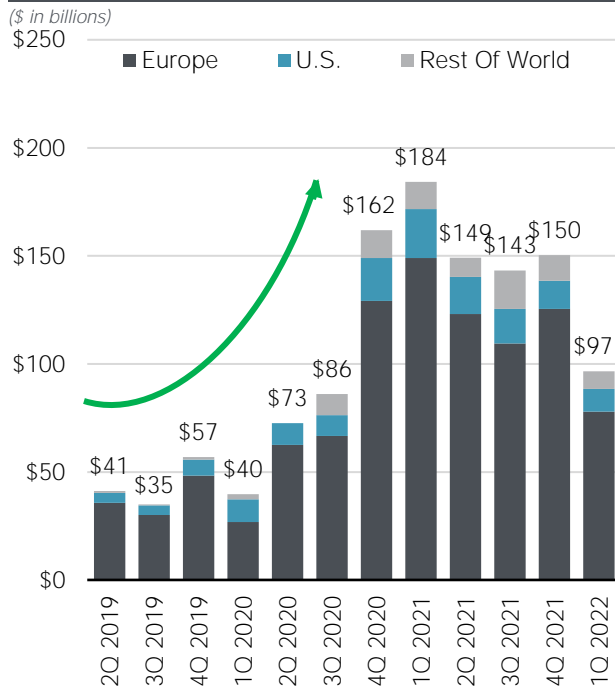
Brad Plumer, New York Times

1) Source: “Net-Zero America: Potential Pathways, Infrastructure And Impacts”, Princeton University
2) Source: Planetary Society analysis via CBS News
3) Source: “To Cut Emissions to Zero, U.S. Needs to Make Big Changes in Next 10 Years”; New York Times

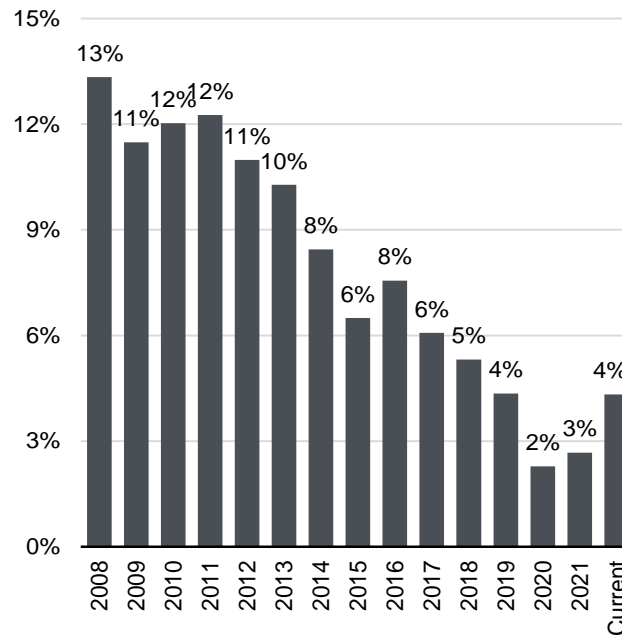
Investor ESG Movement Has Had Significant Capital Markets Impact

- Investors are seeking opportunities to deploy capital into companies that incorporate strong ESG policies
- On the public market side, fund flows into global ESG-oriented funds totaled ~\$885 billion since the beginning of 4Q 2020, more than 2.5x from the prior time period⁽¹⁾
 - Conversely, the traditional energy weighting of the S&P 500 has decreased by 8 points since 2008
- On the private side, private equity sustainable funds have raised more than \$150 billion more than conventional funds since the beginning of 1Q 2021

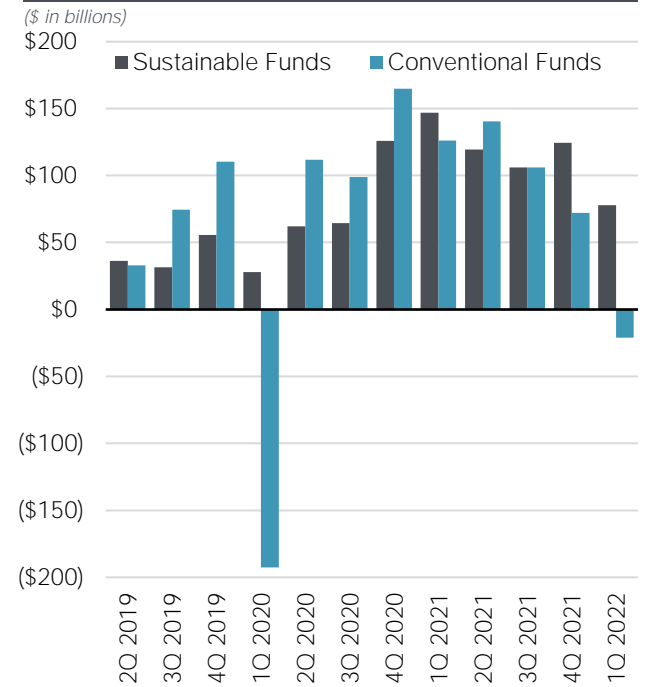
Public Markets ESG Fund Flows⁽¹⁾



Energy Weighting of S&P 500⁽²⁾



Sustainable Fund Flows Outpacing Conventional Fund Flows⁽¹⁾



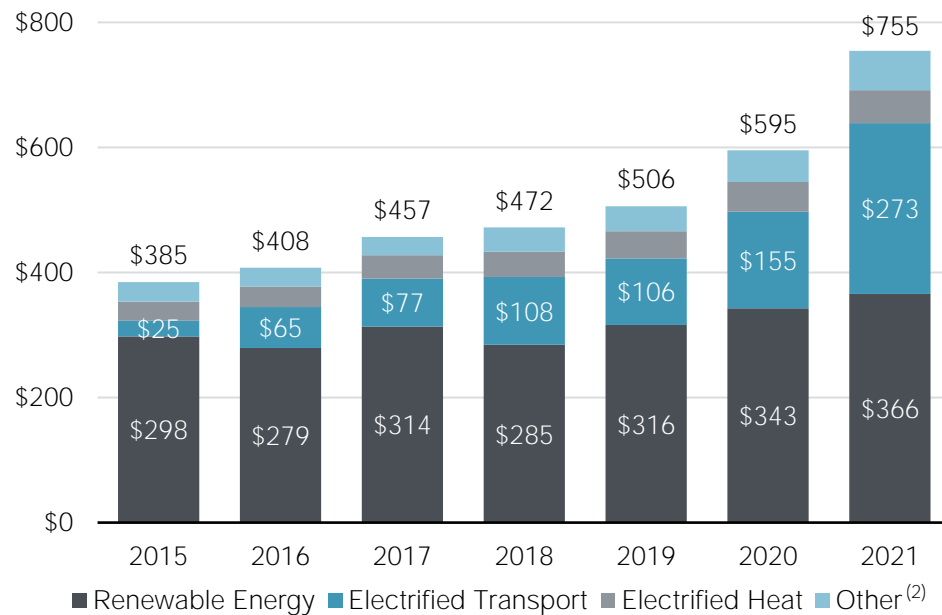
1) Source: Morningstar as of May 2022
 2) Source: Capital IQ as of September 28, 2022

Energy Transition Investments Remain Focused on Renewables and EVs

- Of the \$755 billion invested in energy decarbonization in 2021, renewables and electric vehicles (“EVs”) accounted for 85% of the total spend
 - Includes spend in projects and end-user purchases of equipment/vehicles
 - Renewables primarily driven by large-scale solar and wind power generation projects
- Americas accounted for 20% of total investments, with Asia-Pacific (49%) and Europe (31%) leading
- Equity investments in clean-tech companies totaled \$165 billion; two-thirds of this came from public markets, including SPACs, and the vast majority went to companies focused on the energy and transport sectors

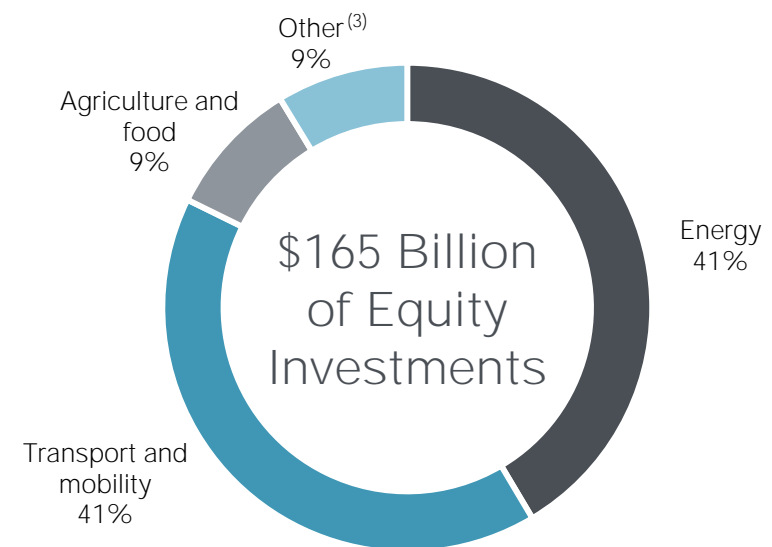
Global Investment in Energy Transition by Sector⁽¹⁾

(\$ in billions)



2021 Clean-Tech Equity Deployments⁽¹⁾

(Share of 2021 energy transition investment in climate-tech companies)



1) Source: BloombergNEF’s “Energy Transition Investment Trends 2022”; January 2022

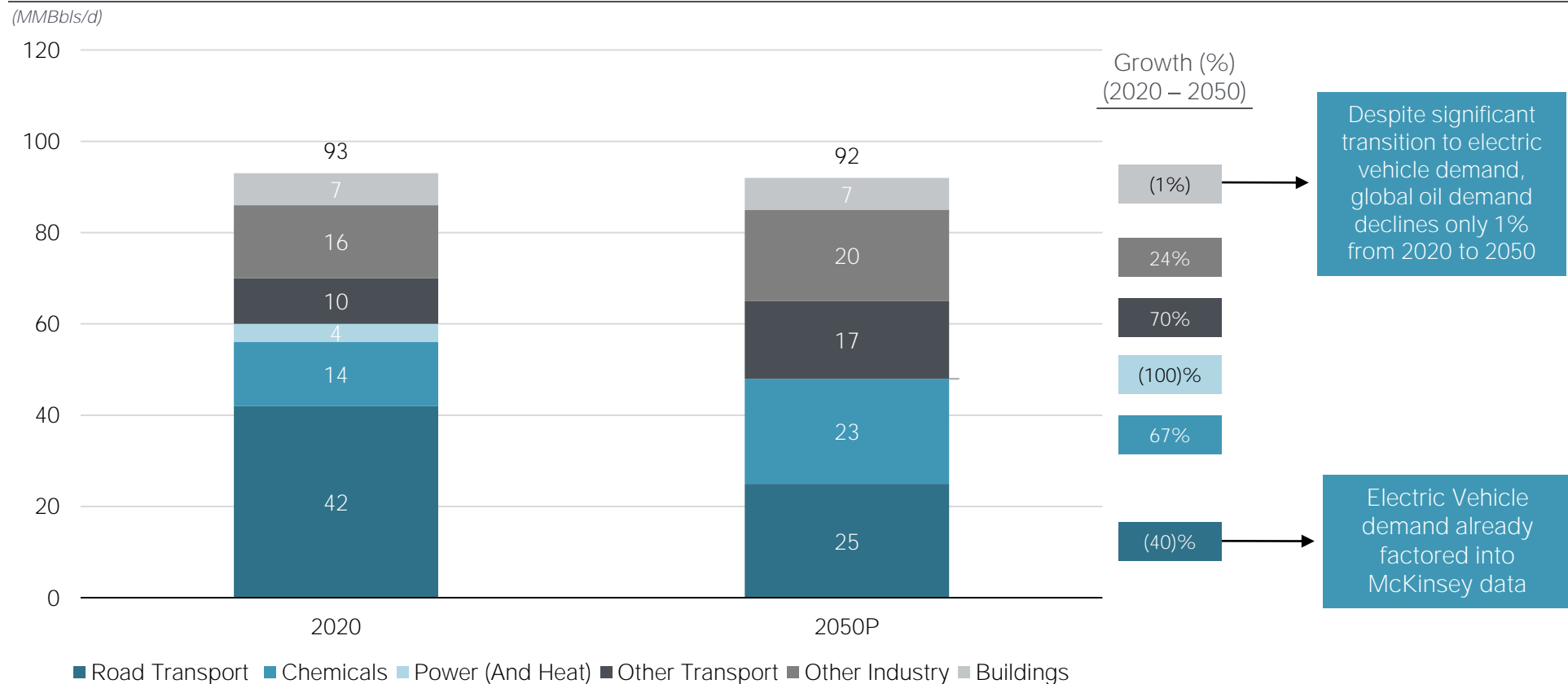
2) Includes CCS, Energy Storage, Hydrogen, Nuclear and Sustainable Materials

3) Includes Industry, Buildings and Climate/Carbon

EV-Driven Oil Demand Decline Offset by Chemicals and Industrials – McKinsey

- Although McKinsey forecasts electric vehicles driving a reduction in global road transportation oil demand from 2020 to 2050 of 40%, it expects much of this decline is offset by growth in chemicals, industry, maritime and aviation, especially in regions with higher GDP growth (e.g., non-OECD countries)
 - 2020 to 2050 oil demand declines only 1%, with most of that decline occurring in the 2040s

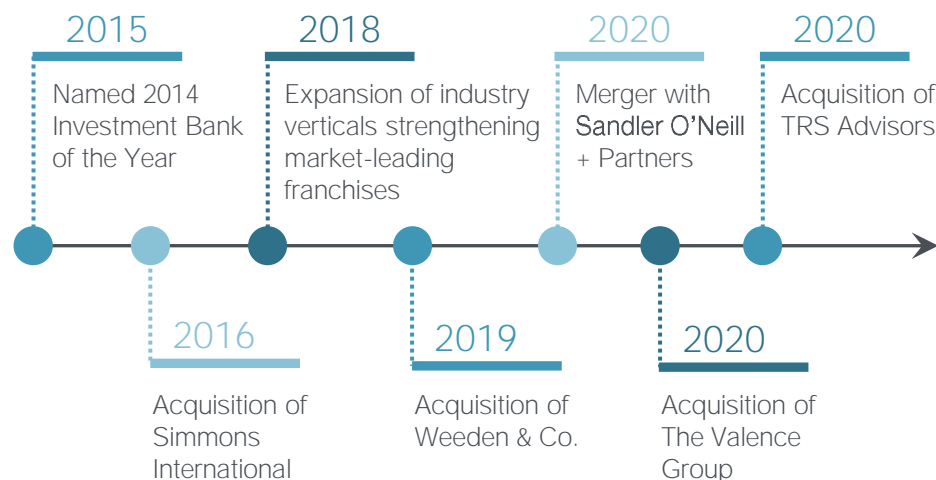
Global Oil Demand Outlook by Sector⁽¹⁾



1) Source: McKinsey Global Energy Perspective 2021

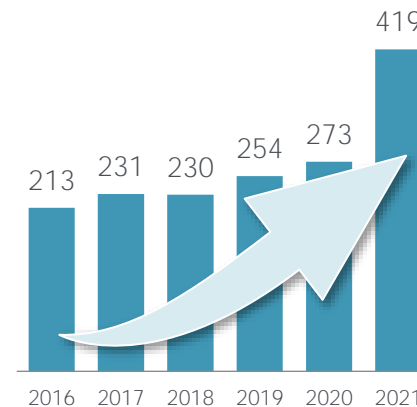
Piper Sandler Overview

Longstanding History with Global Presence

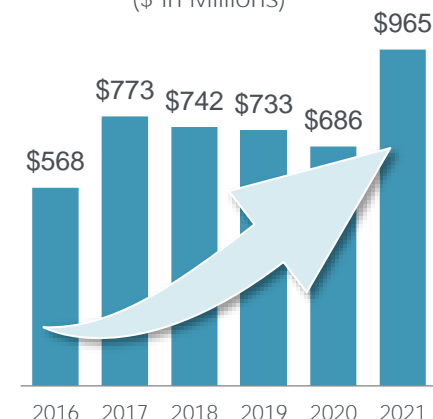


Advisory Momentum⁽¹⁾

Completed Advisory Transactions



Investment Banking Revenue (\$ in Millions)



Comprehensive Product and Service Capabilities

M&A Advisory

- Top-ranked middle market M&A advisor
- Industry-focused M&A
- Advised more than 1,385 M&A transactions worth more than \$400 billion in the past 5 years¹

Equity Securities

- Leading underwriter of growth companies
- Leading aftermarket trading support
- Focused and dedicated research coverage

Debt Securities

- Product expertise across entire leveraged capital spectrum
- Powerful distribution capabilities
- Public and private transaction execution

Equity Private Placements

- Leading industry expertise and products knowledge
- Extensive relationships with private equity and venture firms
- Typical deal type ranges from late stage growth equity to private equity to structured equity

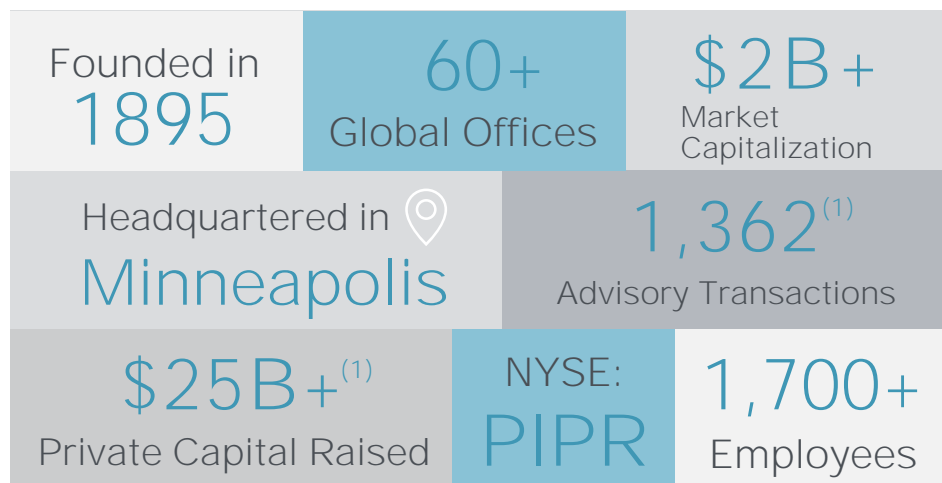
Restructuring

- Leading advisor to financially stressed businesses, creditor constituencies, investors
- Chapter 11, out-of-court workouts, sale of assets, reorganizations, exchange / tender offers, acquisitions

1) Reflects combined data of Piper Sandler and its predecessors

Piper Sandler Overview

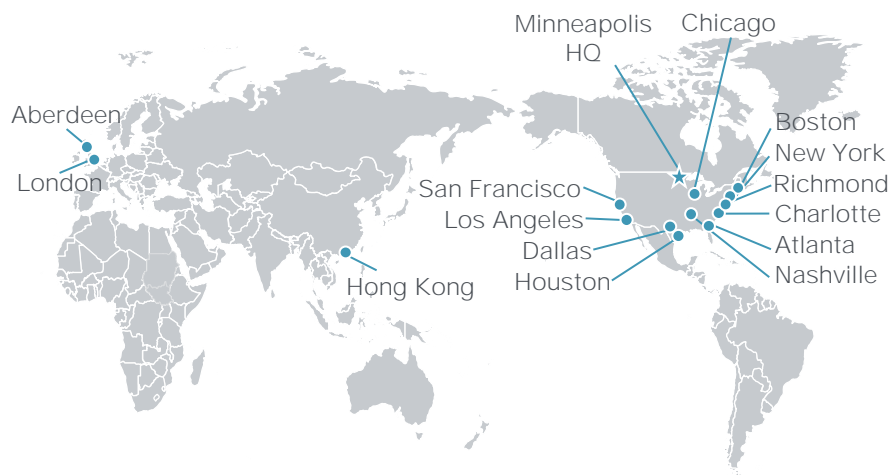
Who We Are



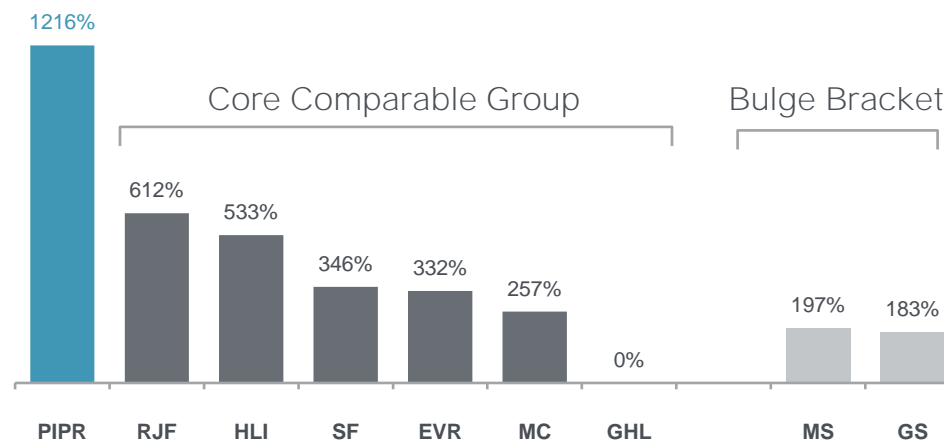
Deep Sector Expertise⁽¹⁾



Global Reach with 60+ Global Offices⁽²⁾



Growth in Advisory Revenue⁽³⁾⁽⁴⁾



1) Completed advisory deals since 2016 - Reflects combined data of Piper Sandler and its predecessors
 2) Listed locations are primary Piper Sandler Investment Banking office locations, 60+ includes the many public finance offices
 3) Source: SEC Filings & Earnings Releases
 4) Reflects the percentage change in advisory revenues reported for the twelve month period ended July 31, 2022, compared to advisory revenues reported for the twelve month period ended December 31, 2013

The Energy & Power Team is a Leading Advisor to the Industry

Overview

- The Piper Sandler energy & power team is equipped with a broad range of service offerings for our clients
- Focus on advisory services
- Piper Sandler has more than 60 offices and 1,700 employees
- Large energy-focused presence in Houston with additional energy professionals in New York, Aberdeen and London
- Recruit and retain best talent
- Extremely broad client base with high repeat business

Core Investment Banking Services



Research

- Leading provider of research coverage for the energy sector
- Macro industry research as well as coverage of 100 energy companies⁽¹⁾

Sales & Trading

- Clients include many of the largest institutional investors in energy

45+ years as an energy advisory team

1,000+ energy transactions completed

100 energy companies covered by research⁽¹⁾

1) As of July 11, 2022

For information on Piper Sandler locations, visit PiperSandler.com.

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