



Financial Review of the Global Oil and Natural Gas Industry: 2023

Petroleum and Liquid Fuels Markets Team

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Background

- The upstream analysis focuses on the financial and operating trends of 175 global oil and natural gas companies (called *the companies* or *the energy companies*), and the downstream analysis focuses on 42 companies (called *the refiners*).
- The data come from the public financial statements each company publishes, which a data service (Evaluate Energy) aggregates for ease of data analysis.
- For consistency, we kept an energy company's assets that were acquired by another company in the group in 2014 or later in the data for the previous years.
- Several charts show comparisons between energy companies and the U.S. manufacturing industry. We collected the data from the U.S. Census Bureau's *Quarterly Financial Report*.

Note: A full list of the companies included and a glossary of terms begin on slide 26.

Key findings for 2023

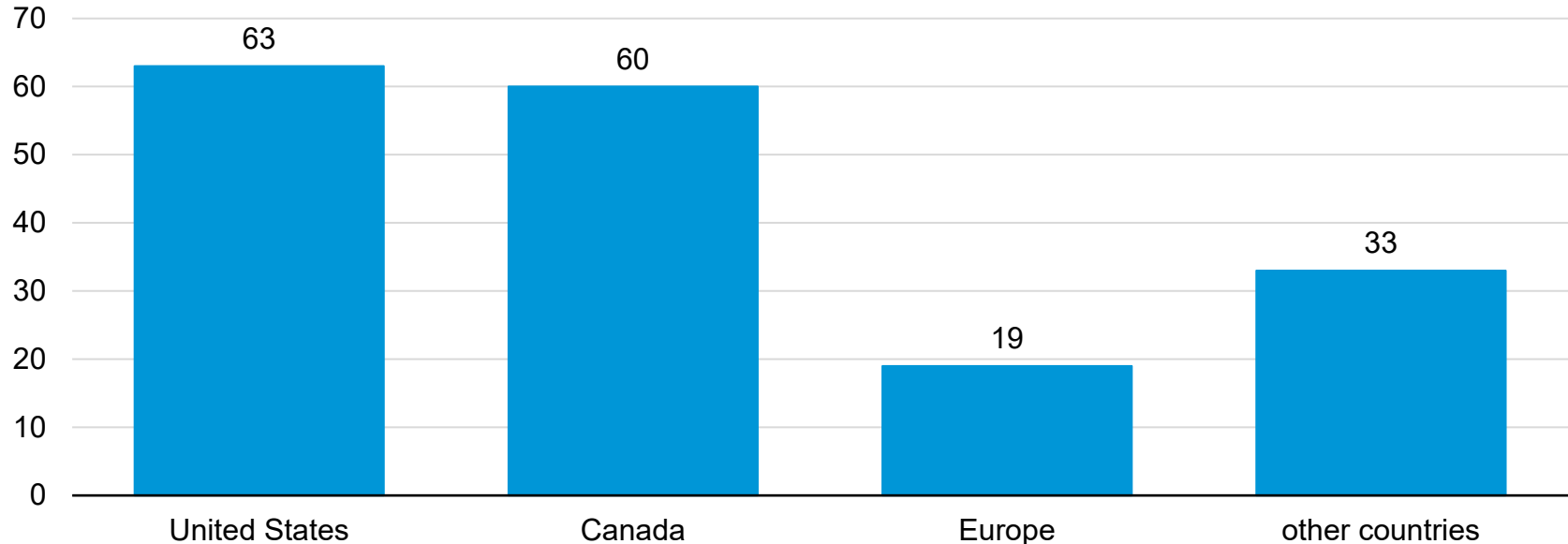
- Brent crude oil daily prices averaged \$82.18 per barrel in 2023—17% lower than in 2022.
- Among the upstream companies, combined petroleum liquids production increased 4% in 2023 from 2022, and natural gas production decreased less than 1%.
- Cash from operations decreased to \$678 billion in 2023—21% lower in real terms than in 2022.
- Exploration and development spending was 15% higher in real terms in 2023 from 2022.
- The energy companies reduced net debt by \$39 billion and allocated \$89 billion to net share repurchases in 2023.
- Refiners' earnings per barrel processed decreased on average in all regions in 2023.
- Capacity utilization among refiners in Asia Pacific increased substantially in 2023.

Upstream Companies

Most company headquarters included in our study are in the United States and Canada

Geographic distribution of global oil and natural gas company headquarters, 2023

number of companies



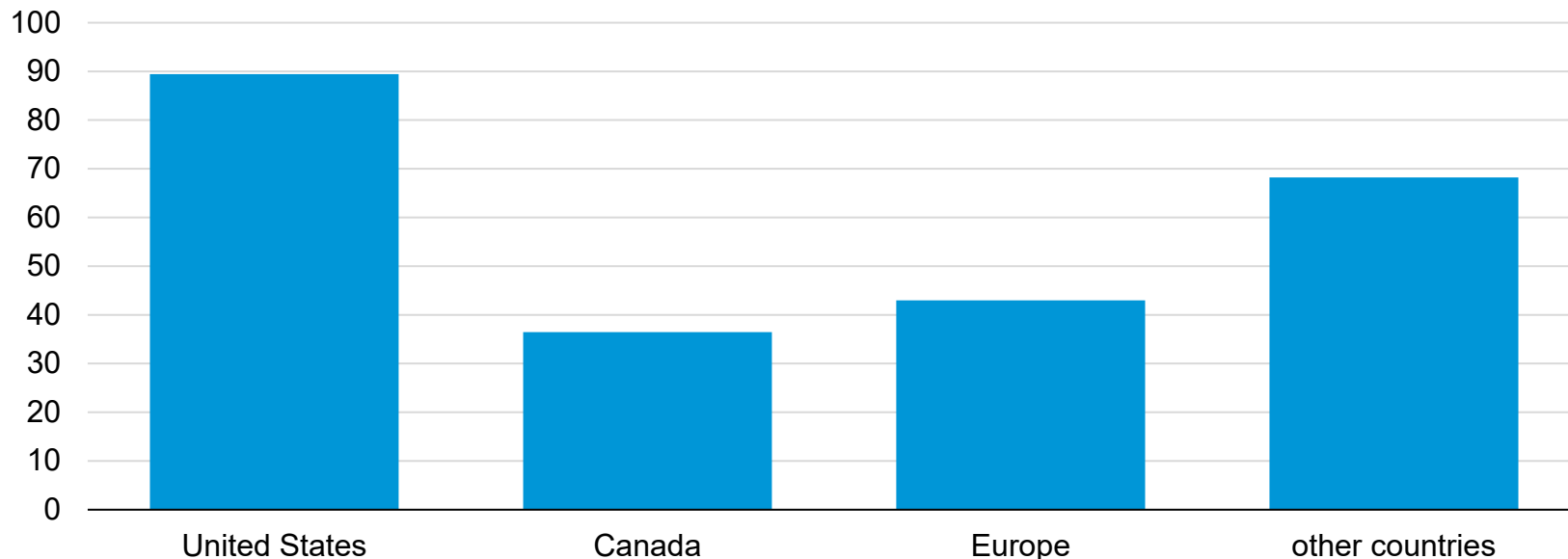
Data source: Evaluate Energy data of companies with publicly available financial statements

Note: *Other countries* refers to Argentina, Australia, Bermuda, Brazil, Cayman Islands, Chile, China, Colombia, India, Indonesia, Japan, Mexico, New Zealand, Pakistan, Tanzania, and Thailand.

In this study, most global oil and natural gas company proved reserves were held by companies in the United States

Proved reserves of global oil and natural gas companies by region of headquarters, 2023

billion barrels of oil equivalent



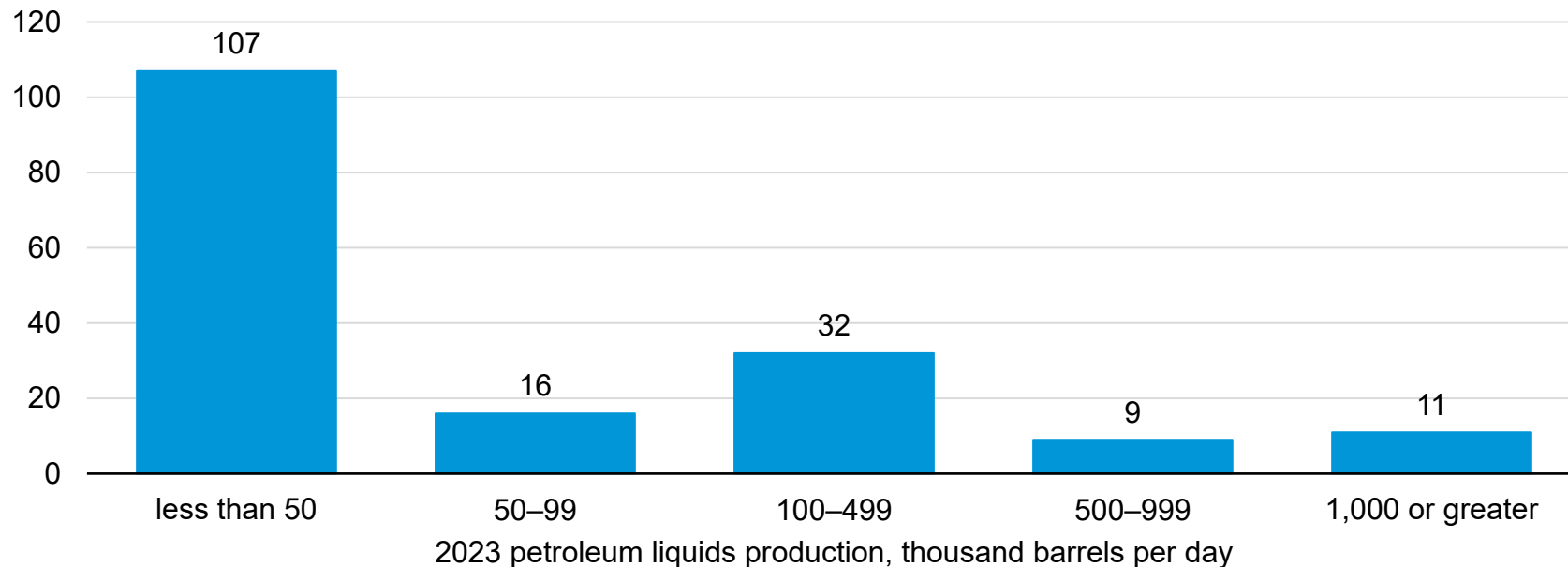
Data source: Evaluate Energy data of companies with publicly available financial statements

Note: *Other countries* refers to Argentina, Australia, Bermuda, Brazil, Cayman Islands, Chile, China, Colombia, India, Indonesia, Japan, Mexico, New Zealand, Pakistan, Tanzania, and Thailand.

About 61% of the companies produced less than 50,000 barrels per day in 2023

Distribution of companies by volume of petroleum liquids produced, 2023

number of companies

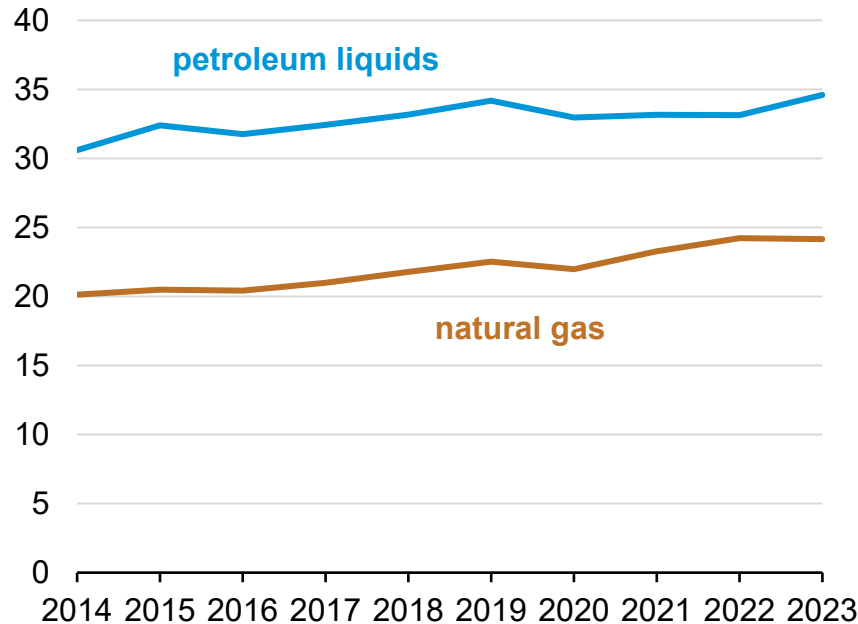


Data source: Evaluate Energy data of companies with publicly available financial statements

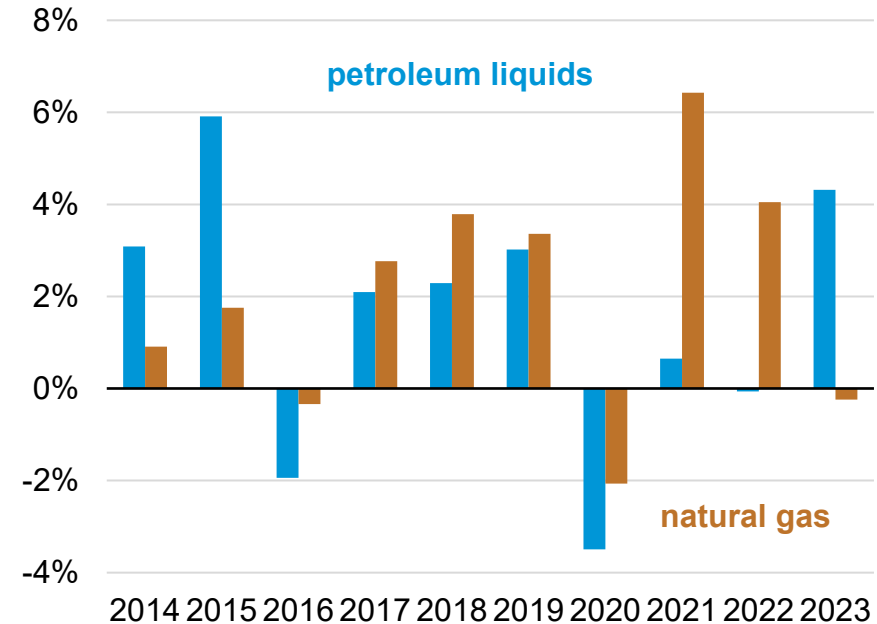
Petroleum liquids production increased, and natural gas production decreased slightly from 2022 to 2023

Petroleum liquids and natural gas production, 2014–2023

million barrels of oil equivalent per day



year-over-year percentage change

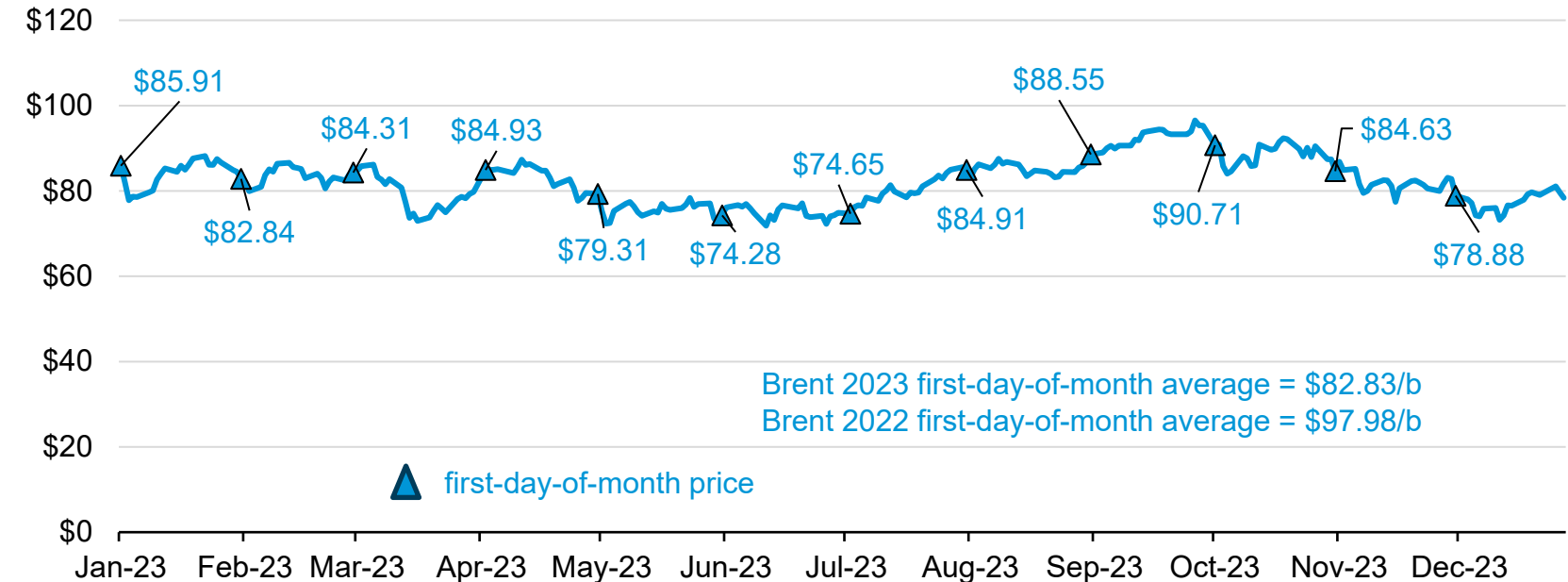


Data source: Evaluate Energy data of companies with publicly available financial statements

The SEC requires companies to value proved reserves based on an average of the prices on the first day of each month

Brent crude oil front-month futures prices, 2023

dollars per barrel (b)



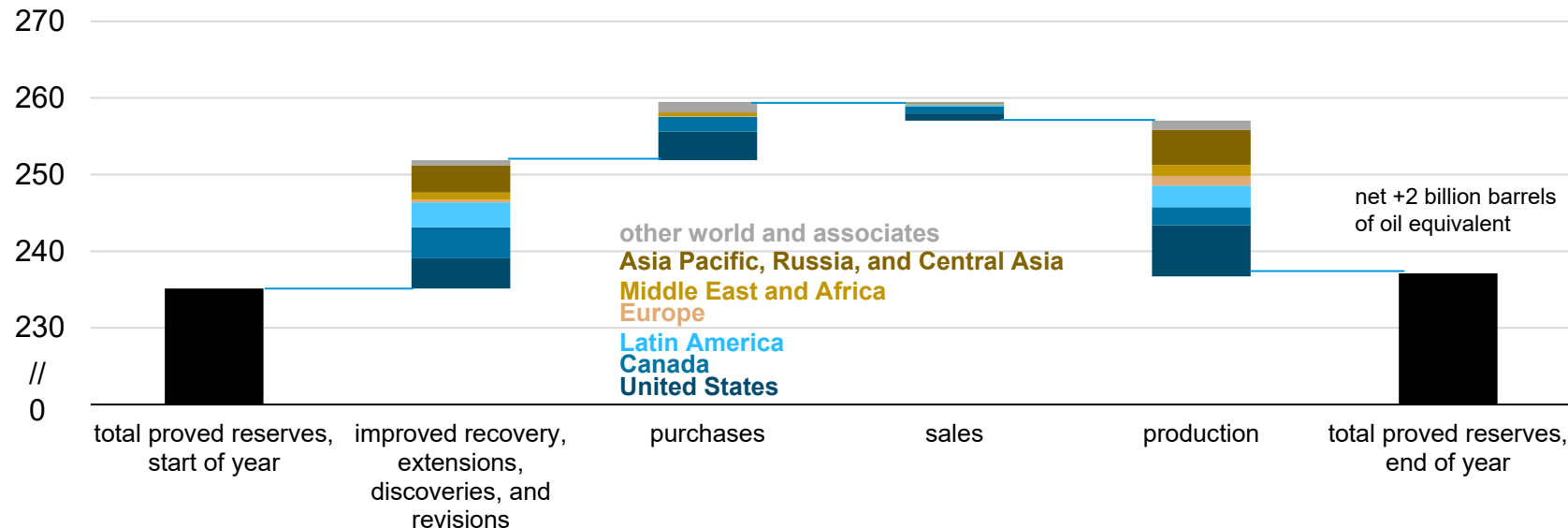
Data source: Intercontinental Exchange, Bloomberg L.P.

Note: SEC = U.S. Securities and Exchange Commission

After net purchases and production, the companies added 2 billion barrels of oil equivalent to proved reserves in 2023

Change in proved reserves from beginning to end of year, 2023

billion barrels of oil equivalent



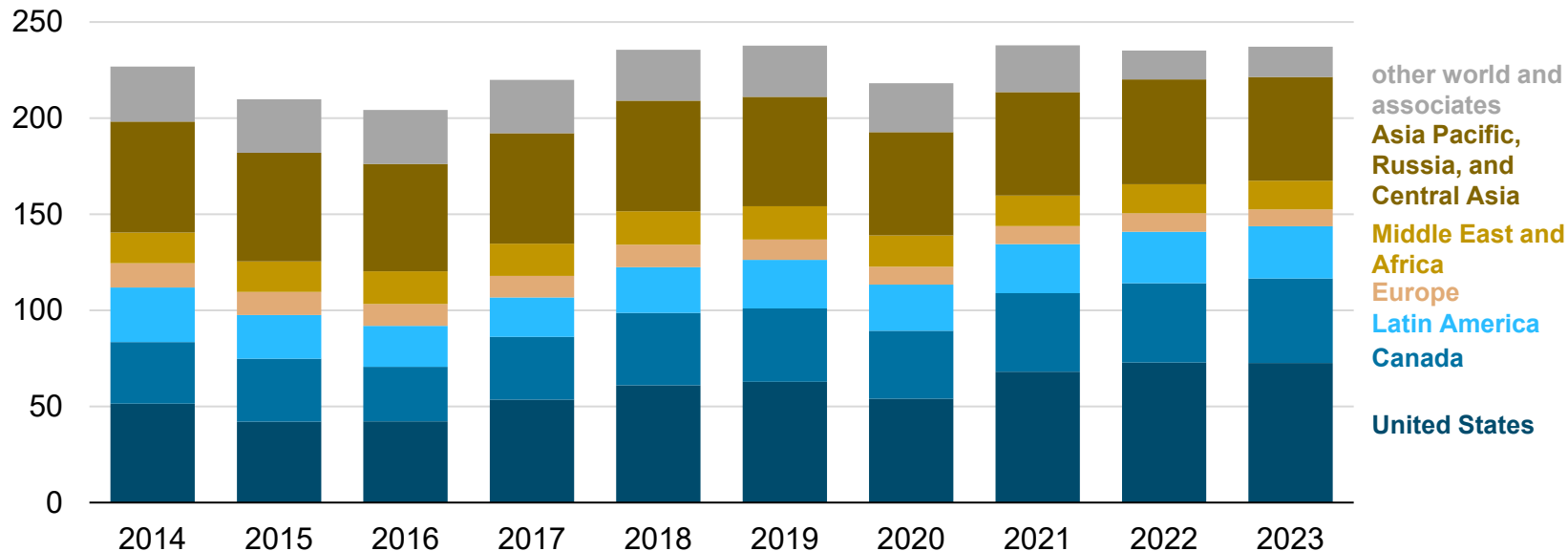
Data source: Evaluate Energy data of companies with publicly available financial statements

Note: Mergers and acquisitions between companies may affect net reserve changes for the year and comparisons between years. Purchases are the volume of proved reserves gained by the purchase of an existing field or property. Sales are the volume of proved reserves deducted by selling an existing field or property.

Proved reserves increased the most in Canada and decreased the most in Europe from 2022 to 2023

Proved reserves by region, 2014–2023

billion barrels of oil equivalent



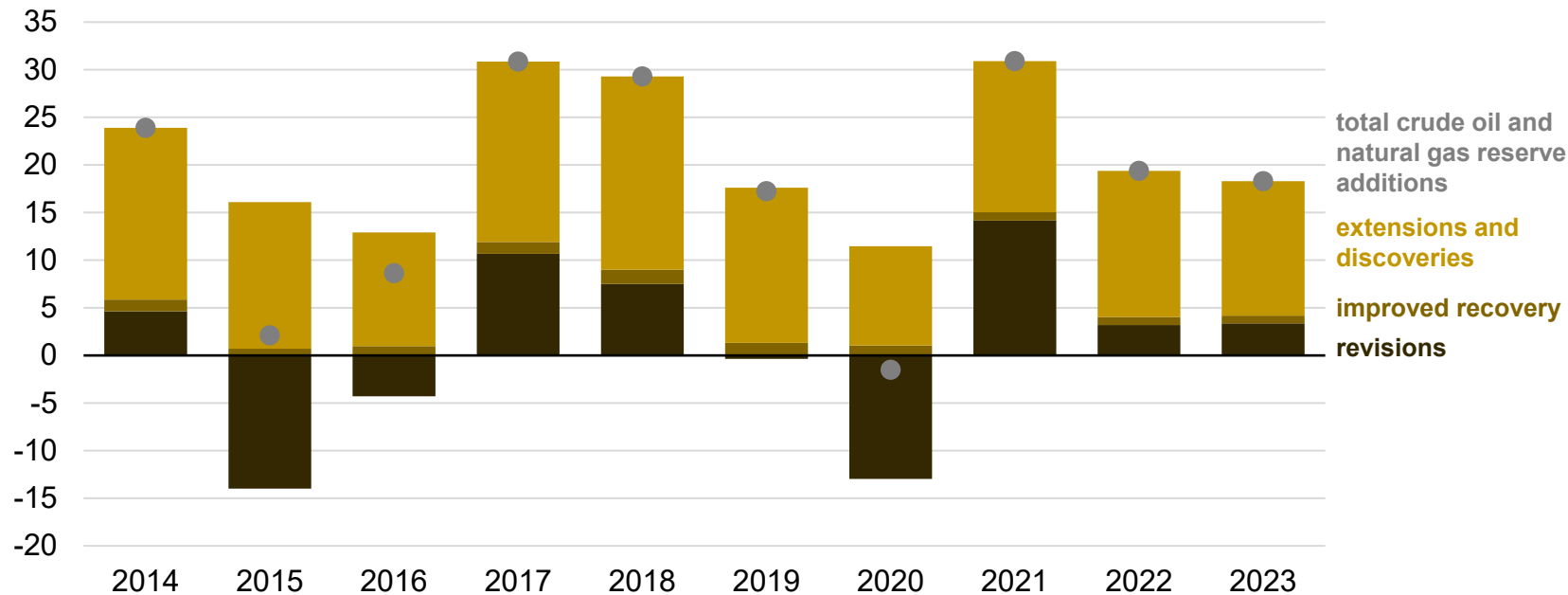
Data source: Evaluate Energy data of companies with publicly available financial statements

Note: Mergers and acquisitions between companies may affect net reserve changes for the year and comparisons between years. *Other world and associates* includes the regions outside the ones identified in this figure and reserves held by associate companies regardless of location.

Proved reserve additions for petroleum liquids and natural gas totaled 18 billion barrels in 2023

Proved reserve additions, 2014–2023

billion barrels of oil equivalent

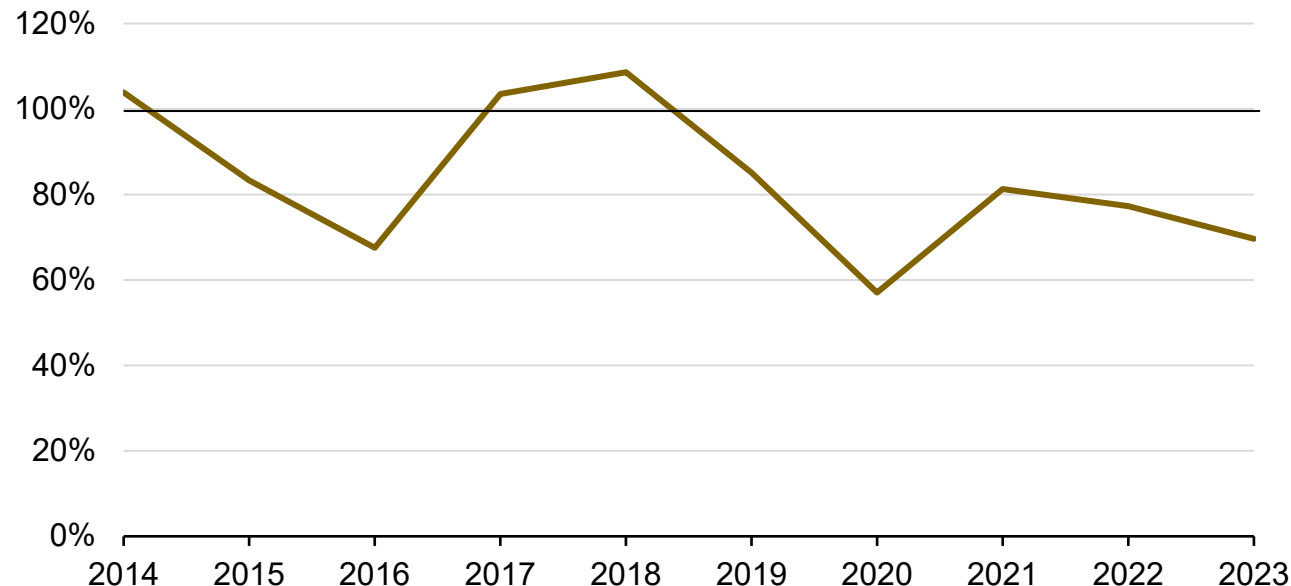


Data source: Evaluate Energy data of companies with publicly available financial statements

Excluding revisions, the companies replaced 70% of their production through organic proved reserve additions

Proved reserve replacement ratio, 2014–2023

percentage



The proved reserve replacement ratio measures the amount of proved reserves a company added compared with the amount it produced that year.

A proved reserve replacement ratio higher than 100% means it discovered more reserves that year than it produced, adding to its resource base and future potential production.

Excluding revisions, the energy companies had a reserve replacement ratio of 70% in 2023. Including revisions, the energy companies had a reserve replacement ratio of 85% in 2023.

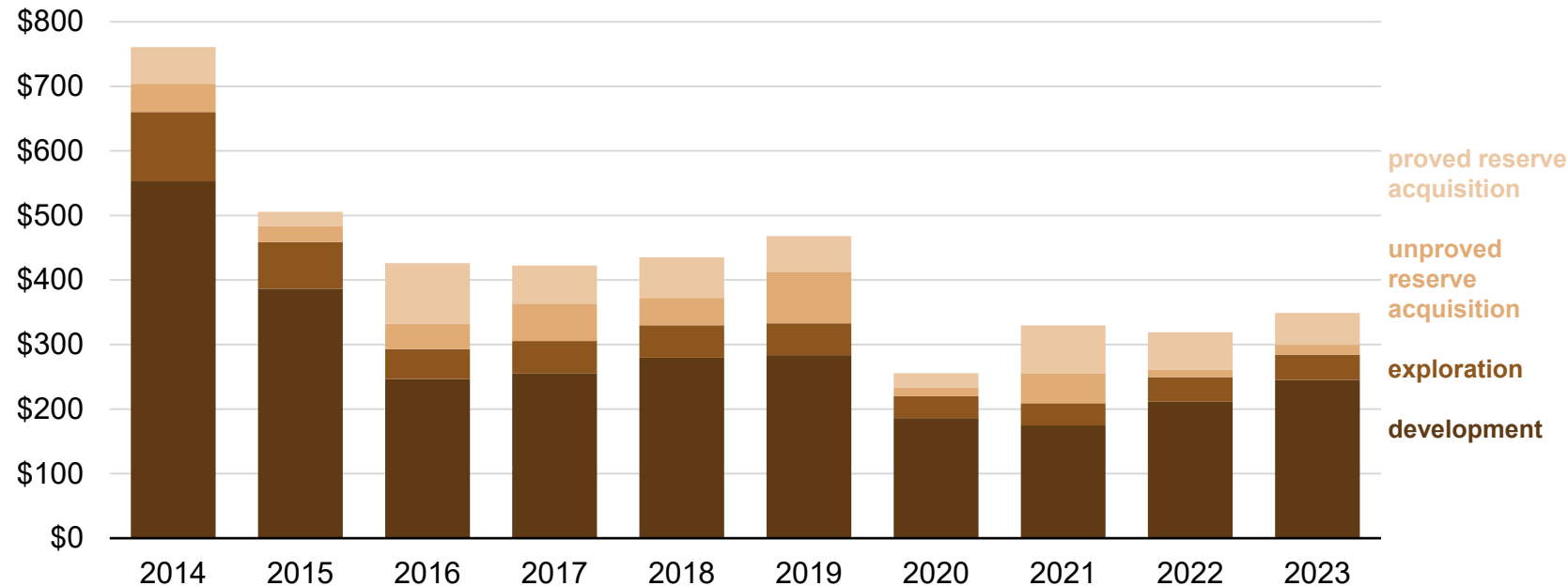
Data source: Evaluate Energy data of companies with publicly available financial statements

Note: Excludes proved reserve revisions. Organic proved reserves additions include those added through extensions and discoveries and improved recovery.

Development costs rose by 16% from 2022 to 2023 and represented a higher share of overall upstream costs

Upstream costs incurred, 2014–2023

billion real 2023 dollars

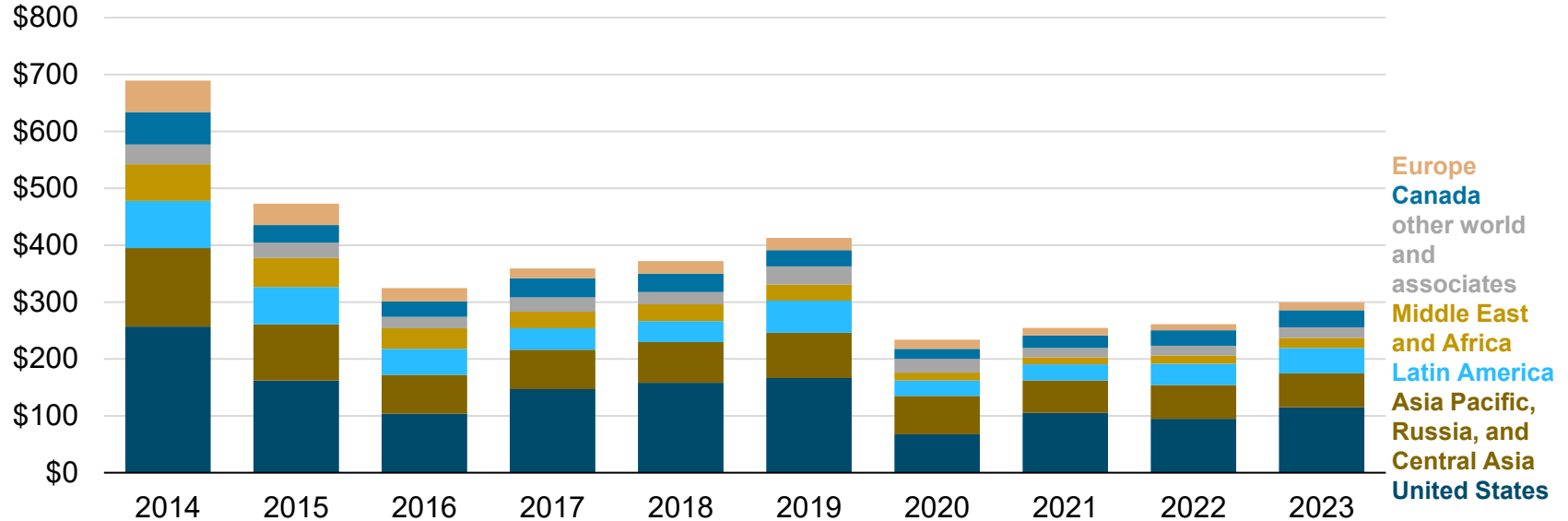


Data source: Evaluate Energy data of companies with publicly available financial statements

Exploration and development spending increased 15% from 2022 to 2023

Exploration and development costs incurred, 2014–2023

billion real 2023 dollars



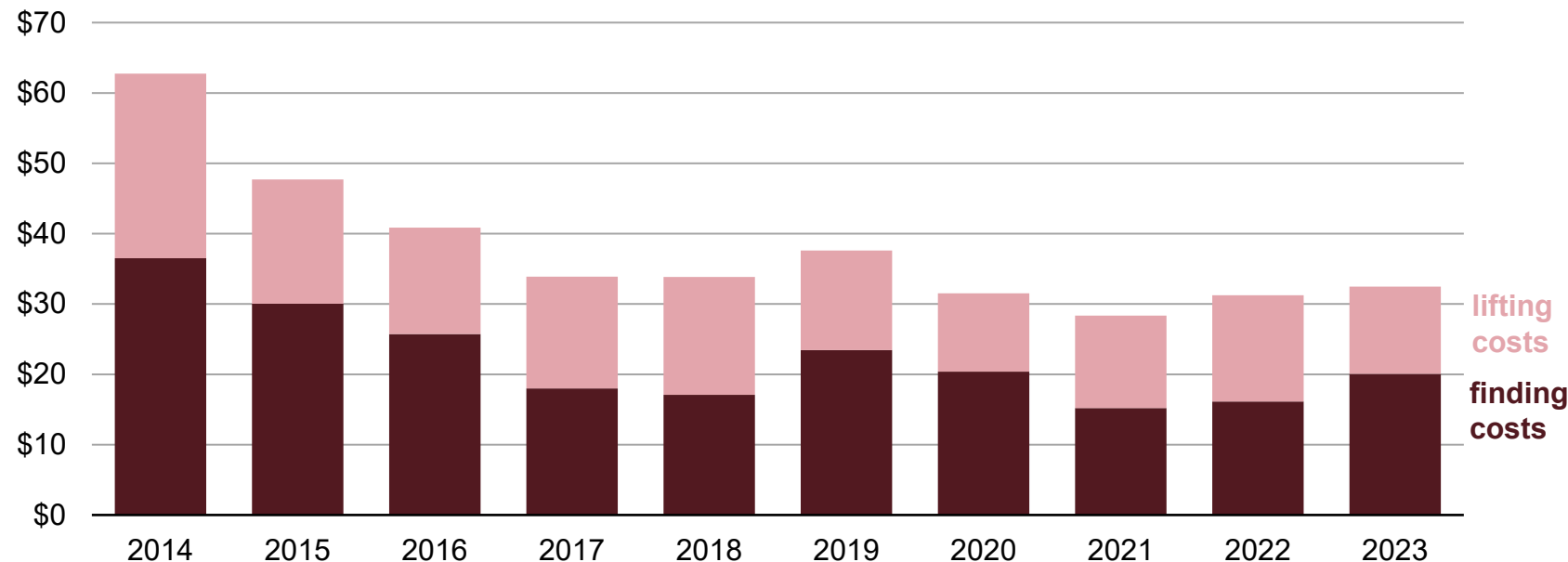
Data source: Evaluate Energy data of companies with publicly available financial statements

Note: Includes costs incurred from acquiring unproved reserves. Associate company spending represents affiliates in which a company owns an equity stake. The costs incurred report does not provide a geographic breakdown of associate company spending.

Finding costs plus lifting costs increased 4% from 2022 to 2023 due to higher finding costs

Finding plus lifting costs, 2014–2023

real 2023 dollars per barrel of oil equivalent



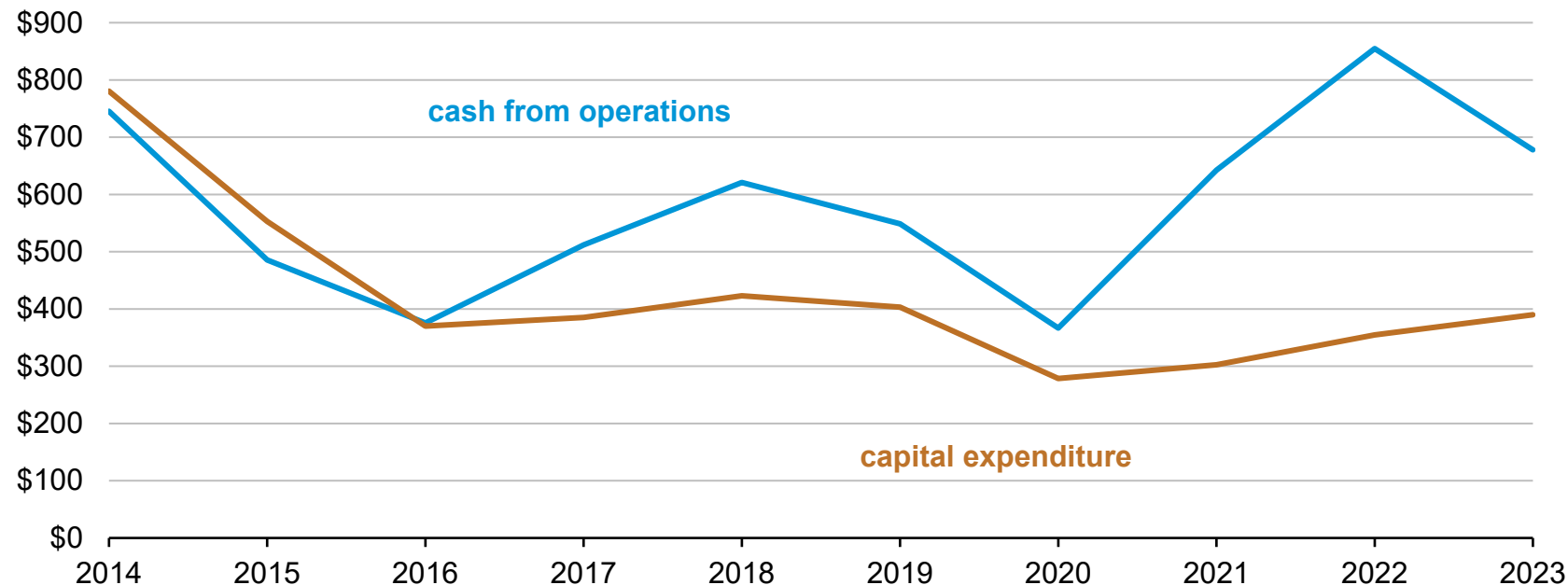
Data source: Evaluate Energy data of companies with publicly available financial statements

Note: Excludes proved reserve revisions

Cash from operations decreased by 21%, and capital expenditure increased by 10% from 2022 to 2023

Cash from operations and capital expenditure, 2014–2023

billion real 2023 dollars

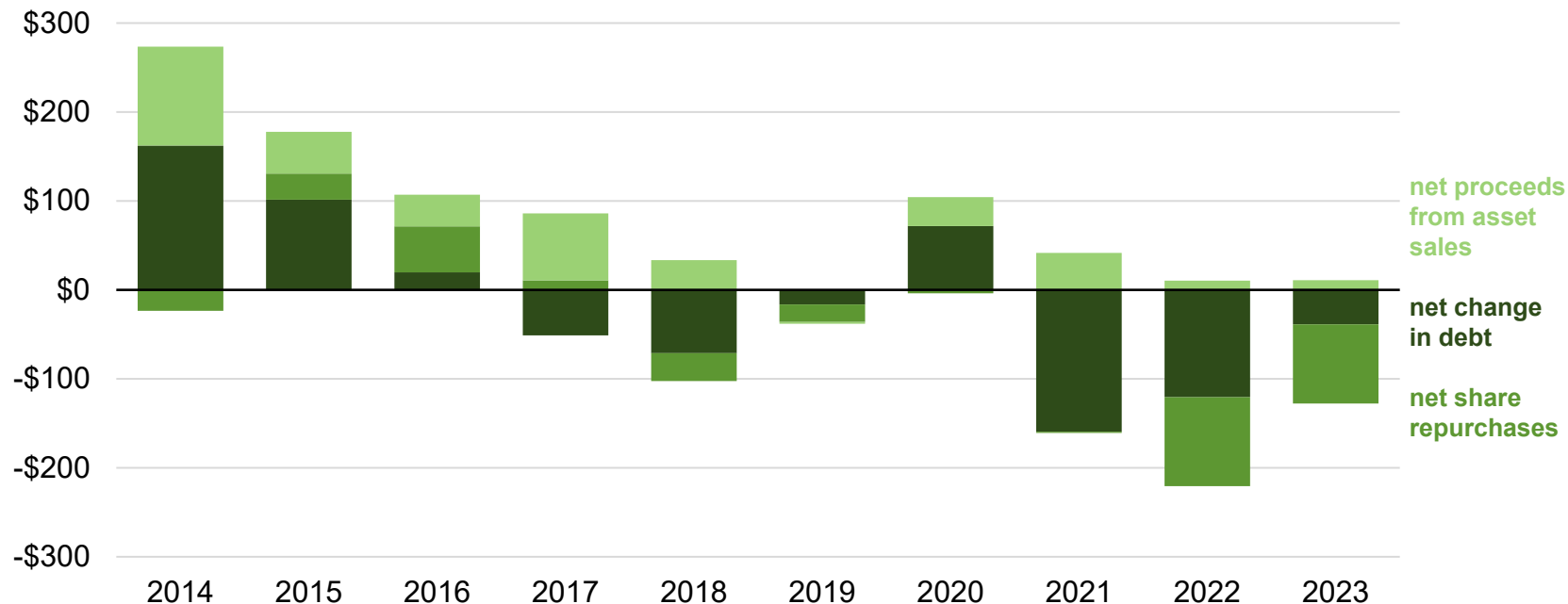


Data source: Evaluate Energy data of companies with publicly available financial statements

The companies decreased net debt by \$39 billion and allocated \$89 billion to net share repurchases in 2023

Financing activities, 2014–2023

billion real 2023 dollars

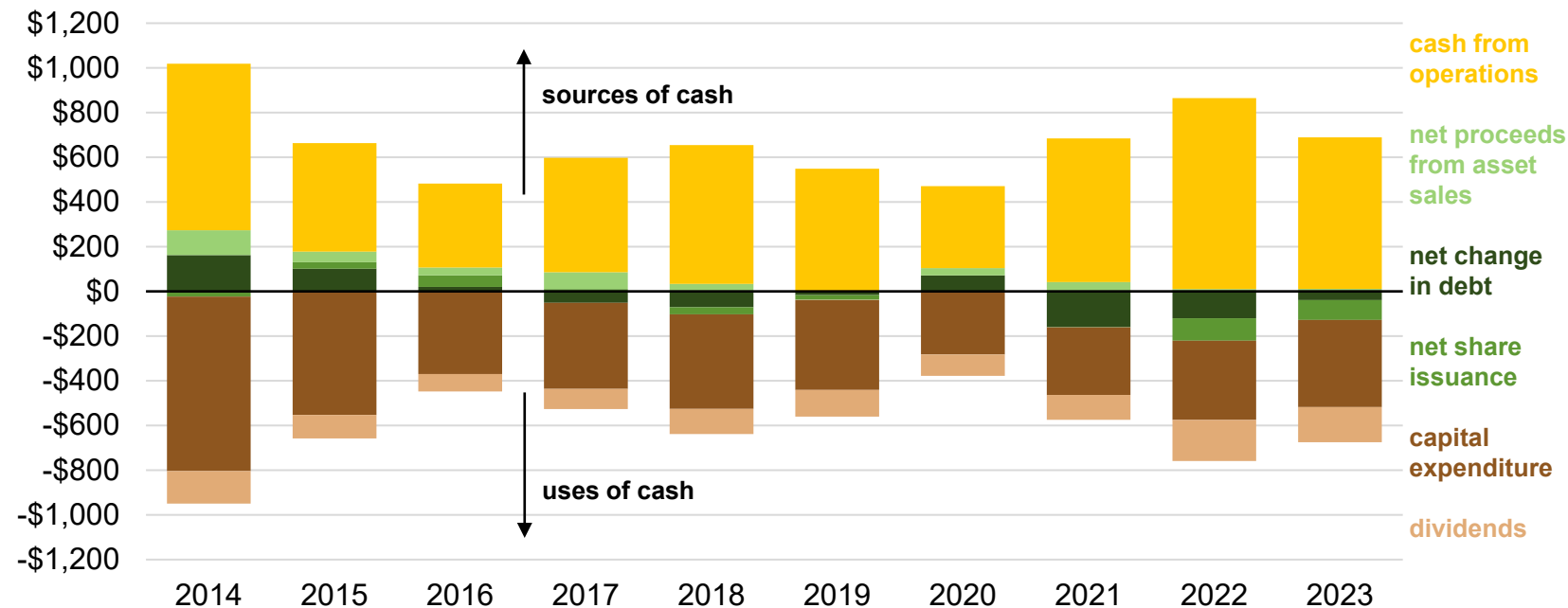


Data source: Evaluate Energy data of companies with publicly available financial statements

Cash from operations decreased to \$678 billion, and capital expenditure increased to \$390 billion in 2023

Sources and uses of cash, 2014–2023

billion real 2023 dollars

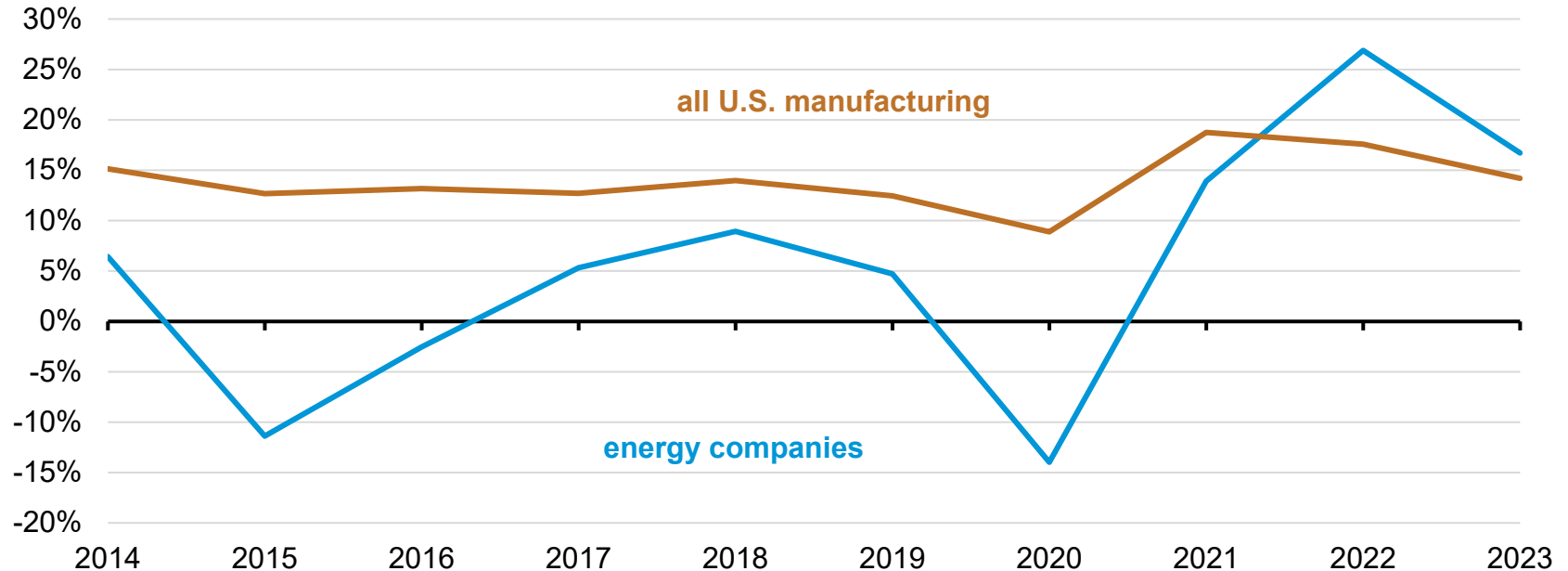


Data source: Evaluate Energy data of companies with publicly available financial statements

Return on equity for the energy companies decreased to 17%, and for U.S. manufacturing companies it decreased to 14% in 2023

Return on equity, energy companies and U.S. manufacturing companies, 2014–2023

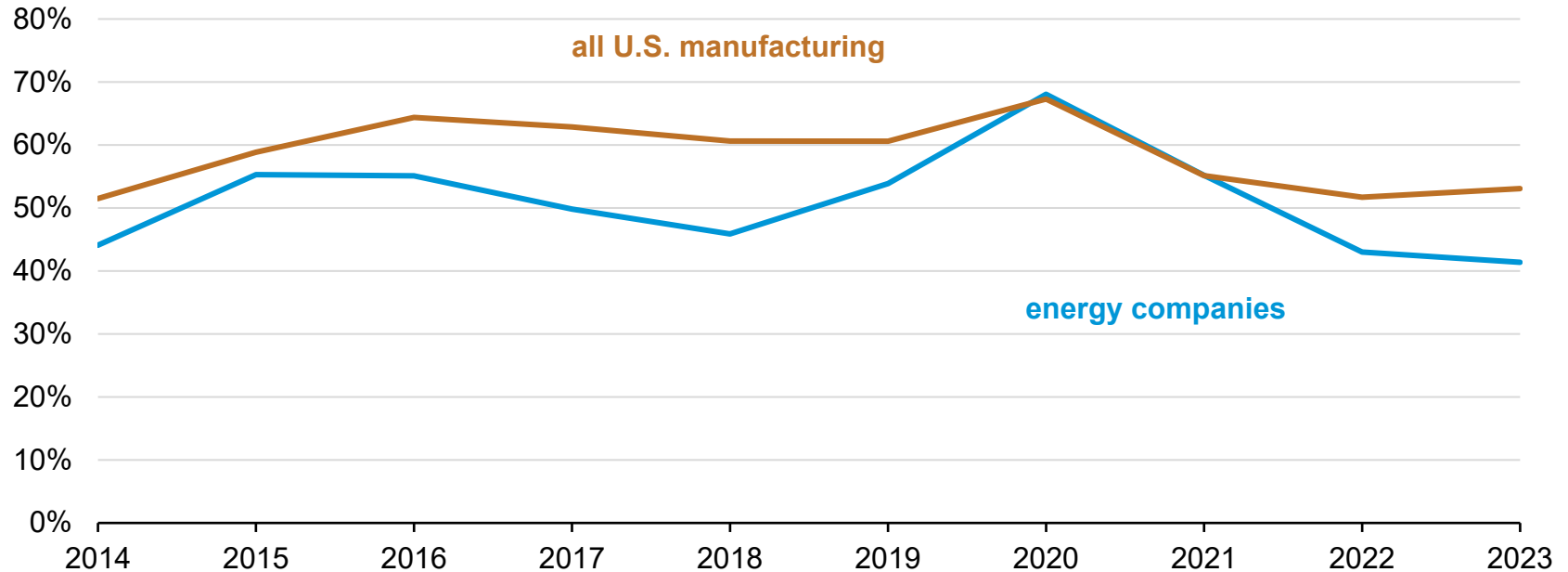
percentage



Data source: Evaluate Energy data of companies with publicly available financial statements and U.S. Census Bureau

The long-term debt-to-equity ratio decreased to 41% for the energy companies and increased to 53% for U.S. manufacturing companies

Long-term debt-to-equity ratio, energy companies and U.S. manufacturing companies, 2014–2023
percentage



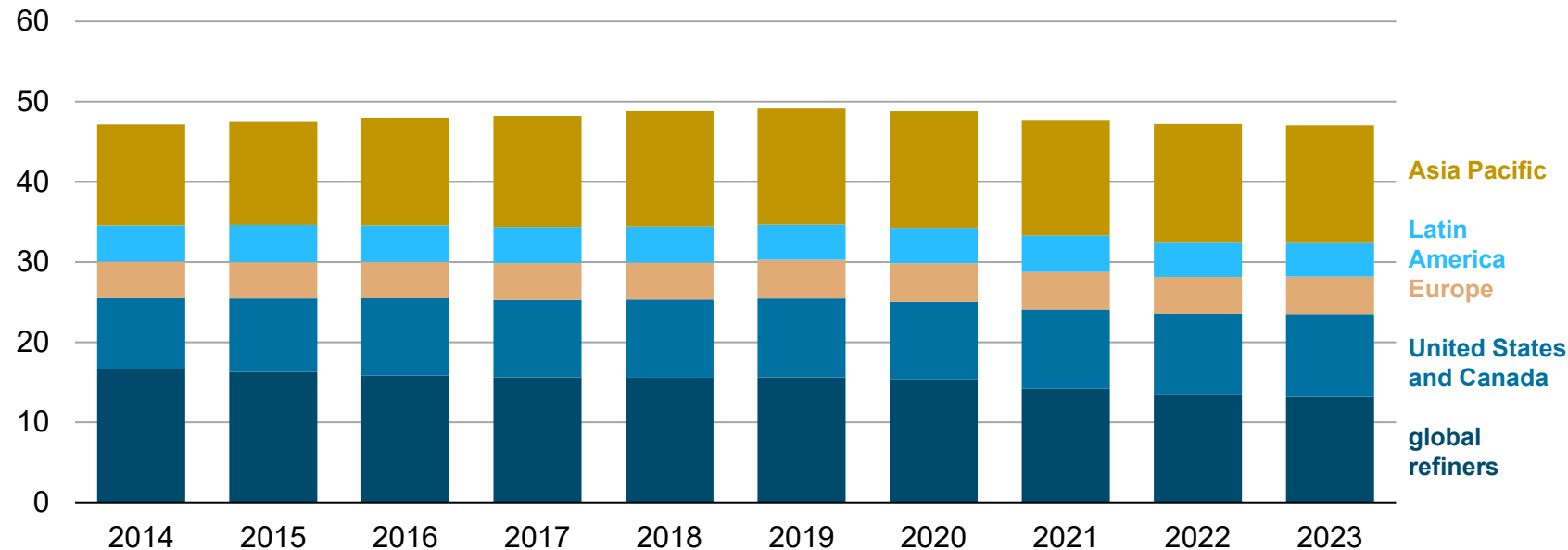
Data source: Evaluate Energy data of companies with publicly available financial statements and U.S. Census Bureau

Downstream Companies

Among the refining companies, global refining distillation capacity decreased slightly from 2022 to 2023

Global refining distillation capacity by region, 2014–2023

million barrels per day



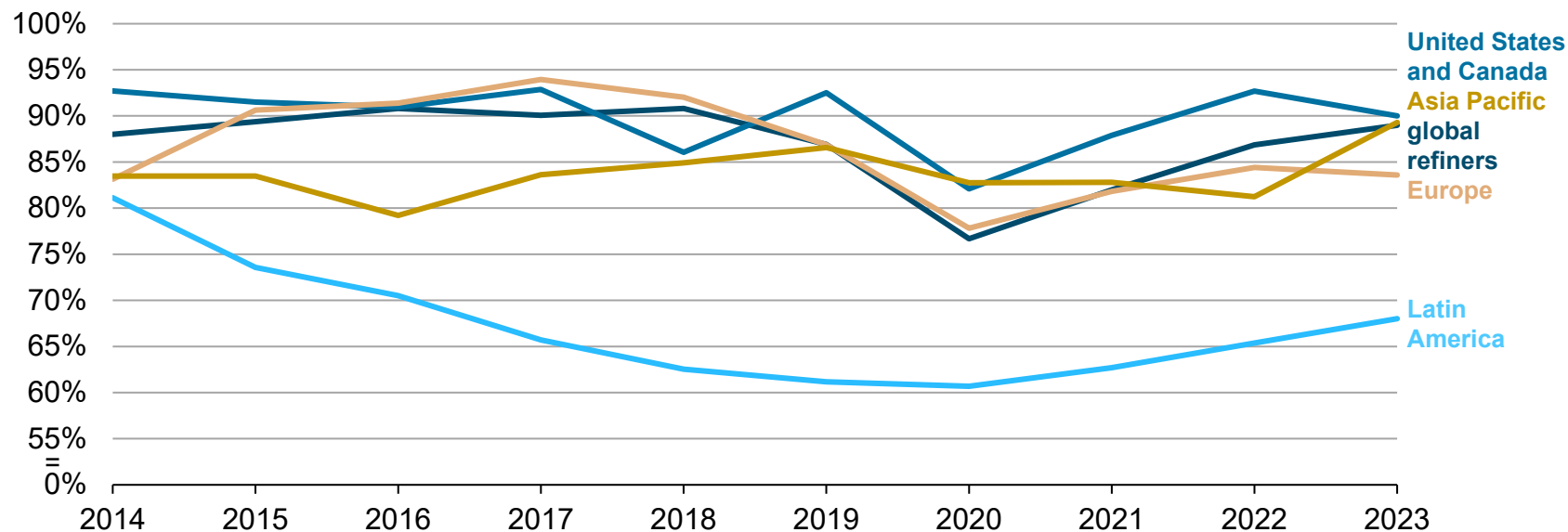
Data source: Evaluate Energy data of companies with publicly available financial statements

Note: A global refiner is a company with refining assets in different regions of the world. We used Sinopec Corp.'s 2022 distillation capacity number for 2023 because its 20-F filing was unavailable.

Capacity utilization for these refining companies averaged 87%, and North American refiners had the highest capacity utilization in 2023

Refining capacity utilization by region, 2014–2023

percentage



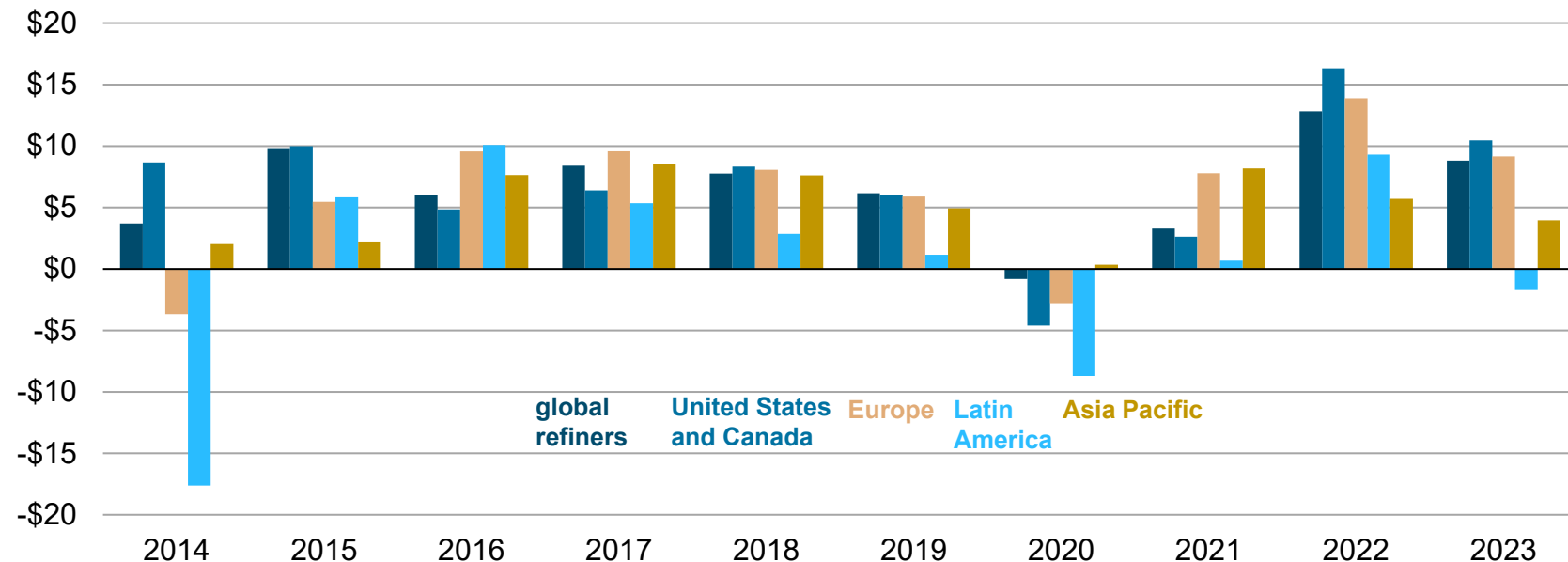
Data source: Evaluate Energy data of companies with publicly available financial statements

Note: A global refiner is a company with refining assets in different regions of the world. We used Sinopec Corp.'s 2022 distillation capacity number for 2023 because its 20-F filing was unavailable.

Among the refining companies, earnings per barrel processed decreased on average in all regions from 2022 to 2023

Refiner earnings per barrel of oil processed by region, 2014–2023

real 2023 dollars per barrel



Data source: Evaluate Energy data of companies with publicly available financial statements

Note: A global refiner is a company with refining assets in different regions of the world.

Appendix: List of companies in the upstream analysis

Advantage Energy Ltd.	Civitas Resources, Inc.	Galp Energia	MEG Energy Corp.	Peyto Exploration & Development Corp.	Surge Energy Inc.
Africa Oil Corp.	Clearview Resources Ltd.	Gear Energy Ltd.	Murphy Oil Corporation	PHX Minerals Inc.	Talos Energy Inc.
Aker BP ASA	CNOOC Limited	Genel Energy Plc	National Fuel Gas Company	Pieridae Energy Limited	Tamarack Valley Energy Ltd.
Alvopetro Energy Ltd.	CNX Resources Corporation	GeoPark Limited	New Zealand Oil & Gas Ltd.	Pine Cliff Energy Ltd.	Tellurian Inc.
Amplify Energy Corp.	Compania General de Combustibles S.A.	Gran Tierra Energy Inc.	Northern Oil & Gas, Inc	Pioneer Natural Resources Company	Tenaz Energy Corp.
Antero Resources Corporation	Comstock Resources, Inc.	Granite Ridge Resources, Inc.	NuVista Energy Ltd.	Prairie Provident Resources Inc.	Tethys Oil AB
APA Corporation	ConocoPhillips	Gulfport Energy Corporation	Obsidian Energy Ltd.	PrimeEnergy Resources Corporation	Tethys Petroleum Limited
ARC Resources Ltd.	Continental Resources, Inc.	Headwater Exploration Inc.	Occidental Petroleum Corporation	PT Energi Mega Persada Tbk	Topaz Energy Corp.
Arrow Exploration Corp.	Cooper Energy Limited	Hemisphere Energy Corporation	Oil and Gas Development Co Ltd	PTT Exploration and Production (PTTEP)	TotalEnergies SE
Ascent Resources Utica Holdings, LLC	Coterra Energy Inc.	Hess Corporation	Oil India Limited	Questerre Energy Corporation	Touchstone Exploration Inc.
Athabasca Oil Corporation	Crescent Energy Company	HighPeak Energy, Inc.	OKEA ASA	Range Resources Corporation	Tourmaline Oil Corp.
Barnwell Industries Inc.	Crew Energy Inc.	Horizon Oil Limited	OMV Group	Repsol	U.S. Energy Corp.
Battalion Oil Corporation	Crown Point Energy Inc.	INA Group	ONGC	Riley Exploration Permian, Inc.	Unit Corporation
Baytex Energy Corp.	Devon Energy Corporation	Impex Corporation	ONGC Videsh Limited	Ring Energy Inc	Vaalco Energy Inc
Beach Energy Limited	Diamondback Energy Inc.	InPlay Oil Corp.	Orca Energy Group Inc.	ROK Resources Inc.	Valeura Energy Inc.
Berry Corporation	Diversified Energy Company PLC	International Petroleum Corporation	Ovintiv Inc.	Royale Energy Inc.	Var Energi ASA
Birchcliff Energy Ltd.	DNO ASA	Japan Petroleum Exploration Co., Ltd.	Pampa Energia SA	Rubellite Energy Inc.	Veren Inc.
Black Stone Minerals LP	Ecopetrol S.A.	Journey Energy Inc.	Panoro Energy ASA	SandRidge Energy, Inc.	Vermilion Energy Inc.
BlueNord ASA	Empire Petroleum Corporation	Jura Energy Corporation	Paramount Resources Ltd.	Santos Limited	Vista Energy S.A.B. de C.V.
Bonterra Energy Corp.	ENAP	JX Energy Ltd.	Parex Resources Inc.	Saturn Oil & Gas Inc.	Vital Energy, Inc. (formerly Laredo)
BP Plc.	Enauta Participacoes SA	Karoon Energy Ltd.	PEDEVCO Corp.	Shamara Petroleum Corp.	W & T Offshore, Inc.
California Resources Corporation	Enerplus Corporation	Kelt Exploration Ltd.	Pemex	Shell Plc	Whitecap Resources Inc.
Callon Petroleum Company	ENI S.p.A.	Kiwitohk Energy Corp.	Permian Resources Corporation	SilverBow Resources, Inc.	Woodside Energy Group Ltd
Canacol Energy Ltd.	EOG Resources, Inc.	Kolibri Global Energy Inc.	Perpetual Energy Inc.	Sino Oil and Gas Holdings Limited	Yangarra Resources Ltd.
Canadian Natural Resources Limited	Epsilon Energy Ltd.	Kosmos Energy Ltd.	Petrobras (IFRS US\$ Current)	Sinopec Corp.	YPF Sociedad Anonima
Cardinal Energy Ltd.	EQT Corporation	Lucero Energy Corp.	PetroChina Company Limited	SM Energy Company	
Cenovus Energy Inc.	Equinor ASA	Magnolia Oil & Gas Corporation	PetroReconcavo S.A.	Southwestern Energy Company	
Chesapeake Energy Corporation	Evolution Petroleum Corporation	Marathon Oil Corp.	PetroRio S.A.	Spartan Delta Corp.	
Chevron Corporation	ExxonMobil	Matador Resources Company	PetroTal Corp.	Star Energy Group Plc	
Chord Energy Corporation	Frontera Energy Corporation	Maurel & Prom SA	Petrus Resources Ltd.	Suncor Energy Inc.	

Data source: Evaluate Energy data of companies with publicly available financial statements

Note: Some companies merged, split, or delisted before 2023. A total of 175 companies existed in 2023.

Appendix: List of companies in the downstream analysis

Alon USA Energy	Ecopetrol S.A.	Marathon Petroleum Corporation	PKN Orlen SA
Andeavor	ENEOS Holdings, Inc.	MOL Group	Repsol
Bharat Petroleum Corporation Limited	ENI S.p.A.	Motor Oil Hellas	Shell Plc
Blue Dolphin Energy Co	ExxonMobil	Neste Corporation	Sinopec Corp.
BP Plc.	Galp Energia	OMV Group	Suncor Energy Inc.
Calumet Specialty Products Partners, L.P.	Grupa Lotos	Par Pacific Holdings, Inc.	TotalEnergies SE
Cenovus Energy Inc.	HF Sinclair Corporation	PBF Energy Inc	TUPRAS
Chevron Corporation	Husky Energy Inc.	Pemex	Valero Energy Corporation
Cosmo Energy Holdings Co., Ltd.	Imperial Oil Limited	Petrobras (IFRS US\$ Current)	Western Refining Inc.
CVR Energy, Inc.	INA Group	PetroChina Company Limited	
Delek US Holdings	Indian Oil Corporation Limited	Phillips 66	

Data source: Evaluate Energy data of companies with publicly available financial statements

Note: Some companies merged, split, or delisted before 2023. A total of 42 companies existed in 2023.

Brief description of terms

- *Cash from operations* is a measure of income from the company's regular business activities.
- *Capital expenditure* is cash used to purchase property, plant, and equipment.
- *Financing activities* measure inflows and outflows in debt or equity markets, including dividends, share issuance or repurchases, and debt issuance or repayments.
- *Return on equity* is a measure of the profit a company earns on money that shareholders have invested.
- *Market capitalization* is the total value of a company's outstanding, publicly traded shares.

Brief description of terms

- *Net income* represents profits after taxes and depreciation.
- *Asset impairments* occur when a company lowers the estimated value of a property to reflect current market value, which may result from the loss of production potential or a decline in oil prices.
- *Reserve revisions* are changes to prior year-end proved reserve estimates, either positive or negative, resulting from new information other than an increase in proved acreage (extension). Revisions may include increases of proved reserves associated with the use of improved recovery techniques and better equipment. They also include corrections of prior year arithmetical or clerical errors and adjustments to prior year-end production volumes to the extent that these alter reserves estimates.

Brief description of terms

- *Upstream activities* refer to crude oil exploration, production, and other operations that occur before refining.
- *Downstream activities* refer to refinery operations, product sales, and marketing at the wholesale and retail levels.
- *Associate companies* are affiliates in which a company owns an equity stake.