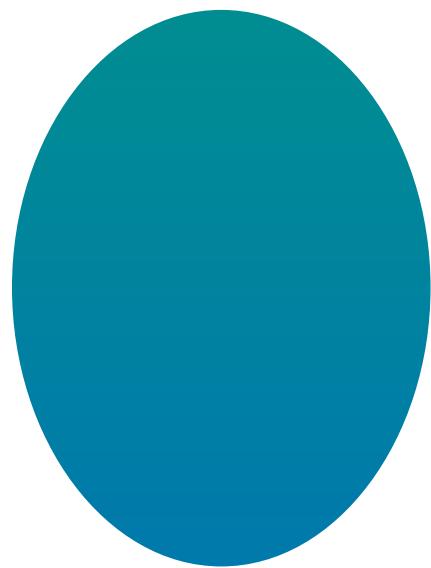




FUTURE

performance | progress | people

MURPHY OIL CORPORATION
2024 SUSTAINABILITY REPORT



We believe in providing energy that empowers people.

1

Introduction

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ABOUT THIS REPORT

The Murphy Oil Corporation 2024 Sustainability Report contains data and information regarding the environmental, social and governance (ESG) issues relevant to our internal and external stakeholders.

We have adopted the five reporting principles of relevance, transparency, consistency, completeness and accuracy, as outlined in the "Sustainability Reporting Guidance for the Oil and Gas Industry, 4th Edition, 2020," published jointly by the International Petroleum Industry Environmental Conservation Association (Ipieca), the American Petroleum Institute (API) and the International Association of Oil & Gas Producers (IOGP).

Since reporting on sustainability topics is an area of continual improvement across our industry, we strive to update our disclosures in line with operating developments and with emerging best practice ESG reporting standards.

Reporting Frameworks and Boundaries

We report annually according to internationally recognized ESG reporting frameworks and standards, including the Sustainability Accounting Standards Board (SASB), Task Force on Climate-related Financial Disclosures (TCFD), Global Reporting Initiative (GRI), Ipieca and API. In addition, we consider the feedback from key ESG raters.

For ease of locating disclosures by framework, we have included Content Indices at the back of this report on page 94. Unless otherwise noted, the data and information are reported at a total enterprise level, for assets under our operational control and for calendar year 2023. All currency references are in US dollars. Values in charts and tables may not sum to the total amounts shown, due to rounding.

Supporting Industry Efforts for Consistent and Comparable Reporting

We participate in several industry initiatives working to improve sustainability reporting. One such initiative is with API on its Climate-related Reporting Initiative. The aim of this initiative is to develop more consistent and comparable reporting of key greenhouse gas (GHG) indicators in a template form for voluntary use by individual companies. Further details can be found on the [API website](#). For Murphy's API Template for GHG Reporting, please see page 92. We also participate in Ipieca's Scope 3 Task Force of its Climate Change Group.

Internal and External Assurance

We recognize the importance of providing our stakeholders with complete and accurate data and information, and have therefore taken the following steps in reviewing the quality of the content of this report:

- **Internal assurance** – We streamlined our data collection activities into an internally developed information system with built-in internal control measures. Additionally, this report was reviewed by a cross-functional management team, subject matter experts and the executive leadership team, as well as the Health, Safety, Environment and Corporate Responsibility (HSE&CR) Board Committee.
- **External assurance** – We engaged ERM Certification and Verification Services (ERM CVS) to conduct an independent assurance of our absolute 2023 total Scope 1 and 2 GHG emissions data. For ERM CVS's Independent Assurance Statement, please see page 90.

Restatements

As we improve our sustainability reporting year-on-year, we note that it may be necessary to restate our prior year data. Reasons for restatements could include changes in reporting boundaries, metric definitions, calculation methodologies or other reasons. For the sake of transparency, we will highlight the restated items and reasons for restatement if we believe it would be meaningful information.

No restatements were made in this year's report.

Our Purpose, Mission, Vision, Values and Behaviors

Throughout this report, we highlight ways in which we are living our values as part of our commitment to ESG excellence.

Our PURPOSE	Our MISSION	Our VISION
We believe in providing energy that empowers people.	We challenge the norm, tap into our strong legacy and use our foresight and financial discipline to deliver inspired energy solutions.	We see a future where we are an industry leader who is positively impacting lives for the next 100 years and beyond.
Our VALUES and BEHAVIORS	Stay with it	Think beyond possible
Do right always <ul style="list-style-type: none"> Respect people, safety, environment and the law Follow through on commitments Share openly and accurately Make it better 	Stay with it <ul style="list-style-type: none"> Show resilience Lean into challenges Support each other Consider the implications 	Think beyond possible <ul style="list-style-type: none"> Offer solutions Step up and lead Don't settle for "good enough" Embrace new opportunities

Awards and Recognition

2023

- Ranked as the highest-scoring company for 2021 ESG performance by Rystad Energy; peer group included 41 of the largest, unconventional public oil and natural gas operators in North America
- Recognized by the Greater Houston Partnership as a "Best Place for Working Parents®"
- Received the United States President's Volunteer Service Award from the Houston Food Bank in recognition of 2022 voluntary efforts
- Awarded the "Good Neighbor" designation by the Spring Branch Independent School District in Houston
- Named one of "Most Trustworthy Companies in America 2023" by Newsweek
- Achieved United Way of Greater Houston's 2022-2023 Chairman's Division
- Received Institutional Shareholder Services (ISS) Governance and Social score of 1, which is the best rating possible

2024

- Recognized by the Greater Houston Partnership as a "Best Place for Working Parents®"
- Received the United States President's Volunteer Service Award from the Houston Food Bank in recognition of 2023 voluntary efforts
- Named one of "Most Responsible Companies in America 2024" by Newsweek
- Achieved United Way of Greater Houston's 2023-2024 Chairman's Division
- Recognized by PetroVietnam for excellent and outstanding achievements in operating and managing petroleum operations in Vietnam in 2023
- Named in US News and World Report's 2024-2025 "Best Companies to Work For in Energy"
- Earned AA MSCI ESG Rating

Related Publications and Documents

- [2023 Annual Report](#)
- [2024 Notice of Annual Meeting & Proxy Statement](#)
- [Corporate Governance Documents, including Policies and Charters](#)
- [EEO-1 Filings](#)

Your Feedback Is Welcome

For questions or feedback on our 2024 Sustainability Report, please contact us at sustainability@murphyoilcorp.com.

Additional Information

Visit www.murphyoilcorp.com for additional information.

Publication Date August 7, 2024

KEY TO ABBREVIATIONS

BBL	Barrel
CO ₂ e	Carbon Dioxide Equivalent
MBOE	Thousand Barrels of Oil Equivalent
MBOEPD	Thousand Barrels of Oil Equivalent per Day
MBOPD	Thousand Barrels of Oil per Day
mtCO ₂ e	Metric Tons of Carbon Dioxide Equivalent

MCF	Thousand Cubic Feet
mg/L	Milligrams per Liter
MMBBL	Million Barrels
MMBOE	Million Barrels of Oil Equivalent
MMBTU	Million British Thermal Units

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2024 SUSTAINABILITY REPORT HIGHLIGHTS

Committed to Transparent, Consistent and Accurate Reporting

ADVANCING OUR CLIMATE GOALS



15%–20%
REDUCTION
IN GHG EMISSIONS INTENSITY
by 2030 compared to 2019



ZERO
ROUTINE
FLARING
by 2030



POSITIVELY IMPACTING OUR PEOPLE AND COMMUNITIES

FROM 2019 TO 2023

46% IMPROVEMENT IN
TOTAL RECORDABLE INCIDENT RATE (TRIR)



MORE THAN 15,000 PROFESSIONAL AND
TECHNICAL TRAINING COURSES OFFERED

35% MINORITY REPRESENTATION
AMONG US EMPLOYEES



 **\$11MM+**
IN CHARITABLE
CONTRIBUTIONS
over the last
four years

 **3,500+**
students
have received
EL DORADO
PROMISE
SCHOLARSHIPS
since 2007

Our goal is to help balance society's need for affordable, reliable, secure and responsibly produced energy with the protection of the environment and climate.

CONTINUED ENVIRONMENTAL STEWARDSHIP

FROM 2019 TO 2023

37% GHG
EMISSIONS
INTENSITY

51% METHANE
INTENSITY

66% FLARING
INTENSITY



ZERO OFFSHORE
SPILLS OVER
1 BARREL
since 2003

STRONG GOVERNANCE OVERSIGHT

FOURTH
CONSECUTIVE
YEAR OF
THIRD-PARTY
ASSURANCE
of GHG Scope 1
and 2 data

GHG INTENSITY GOAL
IN ANNUAL INCENTIVE PLAN
since 2021

SUSTAINABILITY METRICS
IN ANNUAL INCENTIVE PLAN
weighting of 20% approved in 2023

CYBERSECURITY
CONTINUOUS ENHANCEMENT

WELL DEFINED BOARD AND MANAGERIAL OVERSIGHT AND MANAGEMENT OF ESG MATTERS



90%
INDEPENDENT



30%
FEMALE



10%
DIVERSE BY RACE

BEST PLACE FOR WORKING PARENTS®

by the Greater Houston Partnership in 2022, 2023 and 2024

UNITED STATES PRESIDENT'S VOLUNTEER SERVICE AWARD

by the Houston Food Bank for 2021, 2022 and 2023 volunteer efforts

CHAIRMAN'S DIVISION

by United Way of Greater Houston for past nine years

2024 MESSAGE TO OUR STAKEHOLDERS



Roger W. Jenkins
CHIEF EXECUTIVE OFFICER

There has been much debate about the future of energy. A key question is whether the world will see an energy transition or an energy expansion – meaning that we add to the types of energy sources we use to meet growing demand rather than abandoning the energy sources, like oil and natural gas, that currently power our global economy. Regardless of how the future unfolds, our actions are governed by the following beliefs. One, climate change and the conservation of natural resources are pressing issues. Two, access to affordable, reliable, secure energy sources is essential to improving the world's quality of life and the functioning of the global economy. And, three, at this time, oil and natural gas play an important role in the energy source mix and will likely do so for the foreseeable future. Against this highly complex backdrop, responsible energy production is essential.

We firmly believe that responsible energy production requires a balanced, thoughtful and practical approach. In this report, we outline what this means to us. Our strong operational expertise, disciplined financial strategy and portfolio of comparatively advantaged assets allow us to deliver inspired energy solutions. We are confident that our dedication and strong legacy will see us through whatever the future brings.

Think Beyond Possible

Since 2019, Murphy's absolute Scope 1 and 2 emissions have decreased by 11% and our GHG emissions intensity has decreased by 37%. We remain on track to achieve our 2030 goals of zero routine flaring and a 15% to 20% reduction in GHG emissions intensity compared to 2019. Our prudent capital allocation process focuses on emissions reduction opportunities that are sustainable, whether through technologies, practices, innovation or industry collaboration. In short, we continue to think beyond possible.

In addition to achieving our lowest GHG emissions intensity since becoming an independent exploration and production company in 2013, we also recorded our lowest methane intensity. Our approach of utilizing targeted methane emissions reduction programs for each asset by source type has yielded effective and significant results. For example, at our Eagle Ford Shale assets, the largest source of methane emissions is natural gas pneumatics on well pads. Therefore, at the end of 2022, we have been focusing on converting these pneumatics to instrument air. By the end of 2024, we expect to have converted 100% of this equipment.

As for water management, we continue to focus on enhancing our responsible practices and reducing our freshwater consumption. Several years ago, we revised our onshore operations risk assessments and business strategy to integrate water-related risks, and we remain steadfast in developing measures to mitigate those risks. We continue to invest in water management infrastructure to improve our water recycling efforts. As a result, in 2023, Murphy achieved its highest-ever recycled water volume in the Company's history.

Respect Safety and People

We are committed to prioritizing the health, safety and security of our employees, contractors and partners. As we expand our international operations, we are focused on ensuring a consistent safety culture worldwide across our organization. This requires not only a comprehensive safety program that includes certifications, audits, training and drills, but a unified global team that develops strong partnerships with our service providers and partners.

In 2023, Murphy's safety performance remained better than the industry benchmarks; we had zero fatalities, a total recordable incident rate of 0.28 and a lost time incident rate of 0.08. While we are proud of this performance, we do not take it for granted and strive to ensure continuous improvements. For example, we are enhancing our global competency program to redefine the framework that supports the development of superior performance and identifies the knowledge, skills, abilities and other behaviors critical to safe and successful operations. We believe this targeted approach has more impact.

Engaging with our employees and fostering a work culture where employees feel respected, included and valued is important to us. At least annually, we review our benefits, training programs and engagement forums. We solicit employee feedback and we make enhancements where appropriate. In response to this feedback, we have invested significantly in our leadership and professional development training programs and also expanded our internal mentorship program, which has doubled in participation since its initial rollout early in 2023.

We are also encouraging and supporting the creation of various employee resource groups to further cultivate an environment of belonging for employees to support each other. In light of these efforts, Murphy has been recognized by the Greater Houston Partnership's "Best Place for Working Parents®" for three successive years, and also by the US News and World Report's 2024-2025 "Best Companies to Work For in Energy."

Make It Better

Part of Murphy's rich and storied history is our long-standing commitment to being a part of the community. We empower our employees to give back where we live and work. To maximize our impact, we focus on specific multiyear investments through strategic partnerships, financial donations or volunteerism. In 2023 alone, we distributed more than \$8 million to causes related to education, health and wellness, and civic and community betterment, and our employees volunteered roughly 3,000 hours through Company-hosted events.

These numbers, while impressive, reflect only a quantifiable portion of what our employees do to help friends and neighbors. In recognition of our commitment to making a difference, Murphy has been awarded Spring Branch Independent School District's Good Neighbor Award, Newsweek's Trustworthy Companies in America, and the Houston Food Bank's United States President's Volunteer Service Award for a third consecutive year.

Lean Into Challenges

We continue to lean into challenges and seek innovative ways to operate our portfolio in a financially sound manner while enhancing our sustainability efforts. I believe that the foundation of a company is only as strong as the people who support it, and Murphy is fortunate to have the feedback and support our Board of Directors, executive team, employees and other stakeholders. Together, we remain dedicated to minimizing risks in our financial, operational and sustainability performance.

As we move forward, we remain committed to our mission to challenge the norm, tap into our strong legacy and use our foresight and financial discipline to deliver inspired energy solutions.

Thank you again for your interest and continued support.



Roger W. Jenkins
CHIEF EXECUTIVE OFFICER

"We challenge the norm, tap into our strong legacy and use our foresight and financial discipline to deliver inspired energy solutions."

WHO WE ARE

Murphy Oil Corporation is an independent exploration and production company with onshore and offshore oil and natural gas production operations in the United States and Canada. We are based in Houston, Texas, and had 725 employees as of year-end 2023.

The Company has a **rich and storied history** dating back to the early 1900s, when our founder, Charles H. Murphy Sr., envisioned becoming an industry leader – first in lumber and banking, and ultimately in oil and natural gas. The Company was incorporated in 1950 and has been publicly traded since 1956.

Murphy's Worldwide Health, Safety and Environmental (HSE) Policy and **Climate Change Position** provide clear and consistent direction to our workforce: to comply with environmental laws and standards and create safe and rewarding workplaces while making positive contributions to the community.

The combination of our commitment and strong operational capabilities makes Murphy a preferred partner in the communities in which we operate, as well as a welcomed partner of both independent and national oil companies.

We produce crude oil, natural gas and natural gas liquids primarily onshore and offshore in the US and Canada and explore in targeted areas worldwide. We have offices in Houston, Texas, and Ho Chi Minh City, Vietnam.

COMPANY OVERVIEW



Sustainable assets that are safely operated with **LOW CARBON EMISSIONS INTENSITY**



HIGH-POTENTIAL EXPLORATION PORTFOLIO with industry-leading offshore capabilities



STRONG GENERATOR OF FREE CASH FLOW with capital allocation flexibility



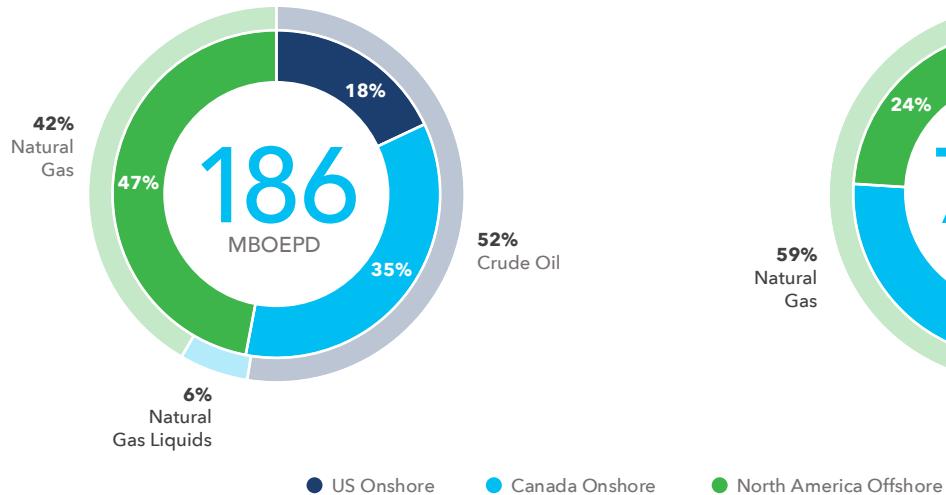
FINANCIAL DISCIPLINE with more than a 60-year track record of returning capital to stockholders



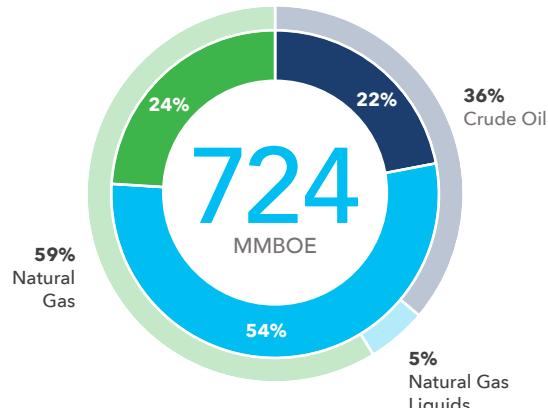
Supported by a multi-decade founding family, with **MEANINGFUL BOARD AND MANAGEMENT OWNERSHIP**

PRODUCTION AND RESERVES

2023 Fiscal Year Net Production¹



2023 Proved Reserves¹



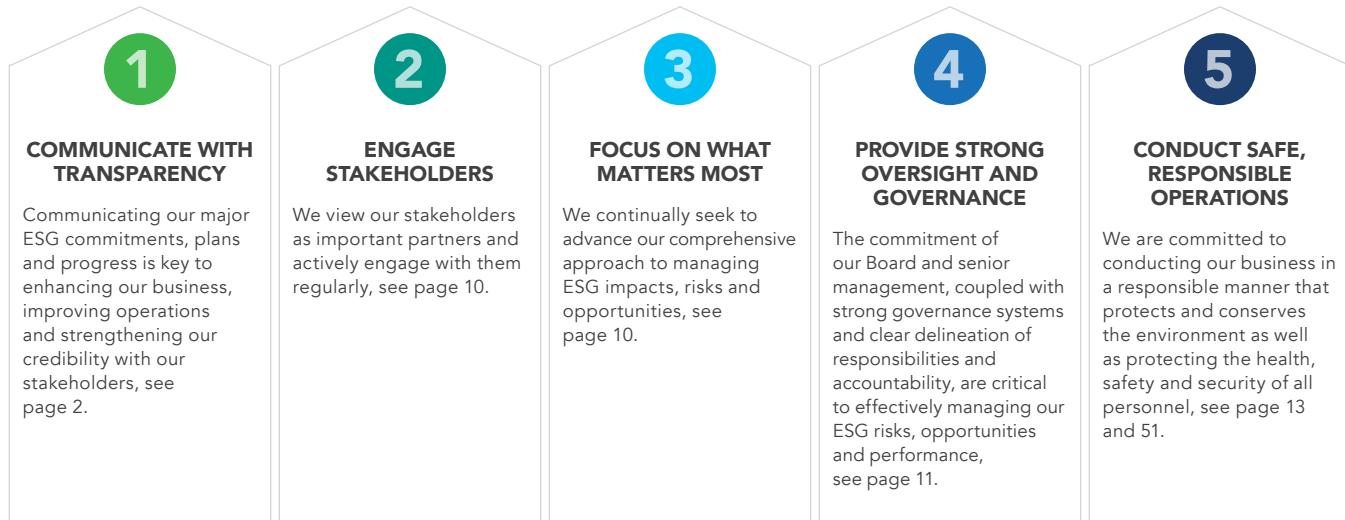
¹ Production and Proved Reserves excludes noncontrolling interest, and represents only the amounts attributable to Murphy. Proved reserves are based on year-end 2023 third-party audited volumes using US Securities and Exchange Commission (SEC) pricing.

OUR APPROACH TO ESG

Operating responsibly and protecting our workforce, communities and the environment are built into our Company DNA and the core values that guide how we work every day.

While we believe this is valuable for the planet and our stakeholders, we also know it is critical to our success as a business. As illustrated in the graphic below, our approach to ESG is based on five principles, which guide the way we work every day.

ESG APPROACH



Responding to Climate Change Is Central to Our ESG Efforts

Today, climate change is at the center of most ESG discussions, and we recognize that it is one of the most pressing issues in our business. Addressing climate change, and the global energy transition it requires, presents important risks and opportunities for our industry and our Company. We believe our longtime commitment to operate responsibly and use resources efficiently position us to meet the challenges and seize the opportunities of the energy transition, so we can remain an industry leader for years to come. Read more about our approach to climate change and emissions reductions in the Environmental Protection and Conservation section, see page 13.



Our Climate Change Position

Find out more about our [climate change position](#) on the Murphy Oil Corporation website.

Contributing to the United Nations Sustainable Development Goals

Our purpose as a company – to provide energy that empowers people – is an important element of sustainable development. We believe we have the most impact on the following UN Sustainable Development Goals (SDGs): SDG 3 “Good Health and Well-Being,” SDG 4 “Good Education,” SDG 7 “Affordable and Clean Energy,” SDG 8 “Decent Work and Economic Growth” and SDG 13 “Climate Action.”

A content index detailing how we contribute to the SDGs can be found on page 110.

SUSTAINABLE DEVELOPMENT GOALS

Engaging Our Stakeholders

We view our stakeholders as important partners. We engage with our employees, investors, the communities where we work and live, government and regulatory agencies, academics and nongovernmental organizations through:

- Direct channels such as focus groups and interviews, investor non-deal roadshows and outreach, proxy voting and meetings.
- Indirect channels such as webinars, forums and panel discussions, professional networks and our website.

To identify key stakeholders, we conduct a mapping process in which we prioritize stakeholders who are willing to engage with us. Maintaining and building these relationships is important to us; and we use the stakeholders' input to guide, improve and/or formalize our internal policies. For more information on our Stakeholder Engagement process, see page 75.

We are committed to improving the relevancy and transparency of our public disclosures on matters that are key to our stakeholders. These disclosures include our Annual Report, Proxy Statement and Sustainability Report, certain questionnaires and our website. Stakeholder engagements occur throughout the year, and we consider post-publication feedback as we plan the next report.

Focusing on What Matters Most

We are continually advancing our comprehensive approach to managing the range of ESG impacts, risks and opportunities Murphy faces. The graphic on the right illustrates our core ESG focus areas, and we continue to advance our programs and performance on these key issues.

To help determine the key sustainability topics we should focus on, we annually conduct a materiality assessment using the process prescribed by Ipieca/API/IOGP. For the purposes of our sustainability reporting, we have adopted Ipieca/API/IOGP's definition of "material" as outlined in "Sustainability Reporting Guidance for the Oil and Gas Industry, 4th Edition, 2020": "Material issues are those that – in the view of both management and external stakeholders – have the potential to significantly affect a company's sustainability performance and stakeholder awareness, assessments or decisions."

Our materiality assessment process includes the following steps:

- **Identify issues** – We list existing and emerging issues relevant to our Company and stakeholders. Sources include stakeholder engagements, enterprise risk management process, SASB's Materiality Map, interviews with senior management, peer benchmarking and ESG rating agencies.
- **Prioritize issues** – We then rank the identified issues based on level of impact to the Company, as well as the level of concern to key stakeholders.
- **Check and confirm issues** – Prior to publishing, we review this report to ensure that the identified material issues are discussed adequately and appropriately.
- **Disclose the process and outcomes** – In the interest of transparency, in this report we outline our materiality assessment approach and outcomes (see graphic below for this year's outcomes).
- **Review the process** – Upon publication of this report, we reach out to key stakeholders for feedback as to whether the report sufficiently addressed their issues of concern, to identify areas of improvement and, where appropriate, make improvements.

Based on the analysis for this year, we identified nine ESG areas of greatest importance to our stakeholders and our Company.

OUR ESG FOCUS AREAS



Board and Managerial Oversight of ESG Topics

Board and senior management commitment, coupled with strong governance systems and clear delineation of responsibilities and accountability, are critical to effectively managing our ESG risks, opportunities and performance.

ESG issues are a formal part of every Board meeting. Furthermore, the Board is responsible for overall risk oversight of the Company, which includes certain environmental, social, supply chain and governance matters.

MURPHY OIL CORPORATION BOARD OF DIRECTORS

ESG Topics Reviewed at Least Annually

- Board Evaluation Process
- Director Nominee Selection Process
- Stakeholder Engagement
- Enterprise Risk Management
- Murphy Ethics Hotline Report
- Compliance Update
- Political Contributions
- Lobbying Activities
- Cybersecurity
- Information Security
- Executive Compensation
- Human Capital Management
- Diversity, Equity and Inclusion
- Climate Change Matters
- Current and Emerging ESG Trends
- ESG Target-Setting and Performance, Including HSE and GHG Emissions Performance

Board Committees and Management Groups With ESG-Focused Responsibilities



Board Committees

The Health, Safety, Environment and Corporate Responsibility (HSE&CR) Committee leads the Board's oversight of sustainability issues and strategy development, including climate, environmental performance, health and safety, and community engagement. This oversight includes overseeing the Company's compliance with, and responses to, applicable laws and regulations.

The following Board Committees have additional oversight of certain ESG-focused responsibilities in accordance with their charters:

- The **Audit Committee** is responsible for reviewing programs related to financial risk, cybersecurity and compliance with the Company's Code of Business Conduct and Ethics.

- The **Compensation Committee** is responsible for overseeing the compensation of the Company's executives and directors, administering the Company's annual incentive compensation plan (see next page) and reviewing the Company's key human capital management strategies.
- The **Nominating and Governance Committee** is responsible for developing criteria for Board membership that encourages a diversity of backgrounds and perspectives, including diversity of race, ethnicity, gender and national origin, and actively seeks individuals qualified to become Board members for recommendation to the Board. The Committee also oversees the Company's lobbying activities and political spending, and reviews current and emerging governance trends, issues and concerns that may affect the Company's business, operations, performance or reputation.

To view detailed responsibilities for each Board Committee, please refer to our [website](#).

Annual Incentive Plan (AIP) for Compensation

The Board's Compensation Committee and our executive leadership team continually seek to improve the alignment of our compensation programs with the interests of our stockholders, with industry developments and with our sustainability goals. Additionally, the HSE&CR Committee monitors the Company's performance on the AIP Sustainability metrics throughout the year.

In 2023, the Compensation Committee approved a weighting of 20% for the AIP Sustainability performance metrics, which reflects a level commensurate with the weighting set in 2022.

ESG Executive Management Committee

Murphy's ESG Executive Management Committee monitors and manages sustainability risks and opportunities. This committee is comprised of our Chief Executive Officer and senior executives representing key functional areas across the Company.

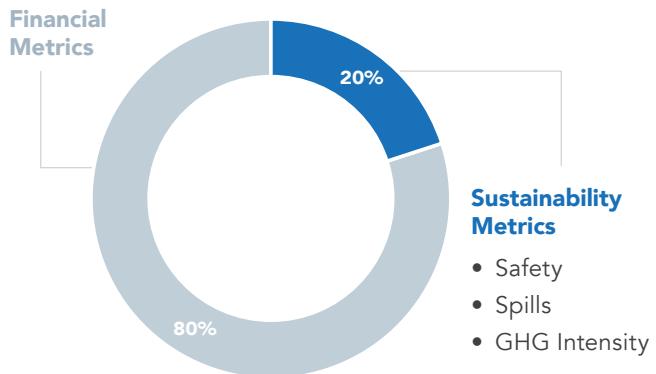
The primary responsibilities of the ESG Executive Management Committee are:

- Ensure the Company has timely and accurate information regarding laws, regulations and industry trends related to ESG matters, including climate; responsible business conduct; the community; and DE&I.
- Monitor and advise the Company on current and emerging ESG matters, including risks and opportunities, that may affect its business, operations, performance or reputation or are otherwise pertinent to the Company and its stakeholders.
- Assist the HSE&CR Board Committee or other Board Committees with respect to ESG matters.
- Review and provide comments to the Company regarding policies, reports and communications on ESG-related matters.
- Review and provide comments on the Company's Sustainability Reports.

This committee is required to meet at least quarterly and reports to the HSE&CR Board Committee. The committee has delegated the responsibility of producing the annual Sustainability Report to the Sustainability Working Group, which is chaired by the Vice President, Sustainability. The committee may delegate other responsibilities to other working groups or subcommittees.

Sustainability Working Group

The Sustainability Working Group is a cross-functional team of subject matter experts that manages and coordinates the publication of our annual Sustainability Report as well as other ESG matters and efforts, as directed by the ESG Executive Management Committee. To reflect the increased importance of understanding and mitigating risks associated with cybersecurity and artificial intelligence (AI), we added a representative from our Information Technology function to the working group.



ESG Executive Management Committee

Reports to HSE&CR Board Committee

Chaired by Chief Executive Officer

Title and functions of current members:

- Chief Executive Officer
- President and Chief Operating Officer
- Executive Vice President and Chief Financial Officer
- Executive Vice President, General Counsel and Corporate Secretary
- Vice President, Human Resources and Administration
- Vice President, Investor Relations and Communications
- Vice President, Sustainability
- Director, Governance and Legal Services

Sustainability Working Group

Reports to ESG Executive Management Committee

Chaired by Vice President, Sustainability

Comprised of representatives from the following business units:

- | | |
|---|---------------------------|
| • Finance and Treasury | • Law |
| • Health, Safety and Environmental | • Operations |
| • Human Resources | • Risk Management |
| • Information Technology | • Supply Chain Management |
| • Investor Relations and Communications | • Sustainability |

Operations Sustainability Focus Team

The Operations Sustainability Focus Team, comprised of operations and HSE specialists, was formed in 2021 to identify, evaluate and implement technologies to support our corporate climate and emissions strategy and goals. The team maintains a funnel of project ideas prioritized by impact, feasibility and cost, addressing both the short and long term.

See the Governance and Responsible Business Practices section on page 73 for more on our approach to other governance issues.

2

Environmental Protection and Conservation

-
- 14** CLIMATE CHANGE AND GHG EMISSIONS
 - 33** WATER MANAGEMENT
 - 41** BIODIVERSITY PROTECTION
 - 44** SPILLS MANAGEMENT
 - 44** ASSET INTEGRITY AND PROCESS SAFETY
 - 46** WELL INTEGRITY
 - 47** CHEMICAL STEWARDSHIP
 - 48** SEISMICITY
 - 49** WASTE MANAGEMENT



Murphy has a long history of conducting our business in a manner that protects and conserves the environment.

This commitment is embedded in the way we have structured our portfolio of assets, developed our strategy and implemented continuous improvements in our operational processes.

Protecting and preserving the environment is a deep-rooted principle for everyone at Murphy, which started with **Charles H. Murphy Jr.** He was an early leader in the environmental awareness movement and helped to create environmental standards and practices for the oil and natural gas industry. Mr. Murphy was honored with the National Wildlife Federation's citation for outstanding individual service for his work in bringing together oil industry leaders and national leaders of the environmental movement. In 1999, he became the first oil industry executive to receive the prestigious Chevron Conservation Award.

Over the past decade, we have transformed the Company into an independent exploration and production player. In 2019, we acquired deepwater US Gulf of Mexico assets, and we fully divested our operations in Malaysia. Through these strategic transactions and others, we have divested refining, oil sands and heavy oil assets, consequently reducing our exposure to emissions-intensive activities. Now, unconventional assets in Canada – which has some of the world's most comprehensive environmental regulations – and the US Gulf of Mexico – which can deliver barrels with some of the lowest emissions intensity in the industry – account for a large share of our operations.

At the tactical level, Murphy strives to continually improve the performance of existing assets by making investments in equipment upgrades, effective maintenance programs and new technologies, which help to monitor, measure and improve our environmental performance. Our environmental initiatives are directed by our **Worldwide Health, Safety and Environmental Policy** and implemented according to our comprehensive HSE Management System (see page 53). This management system helps us focus our efforts related to reducing greenhouse gas (GHG) and other air emissions, improving energy use and efficiencies, protecting water resources and ecosystems, and managing waste and land impact.

Additionally, we provide training and awareness programs on our environmental management system annually for employees. Across all our domestic and international assets, we regularly conduct internal environmental audits against our environmental management checklist, as defined in the HSE Management System. We also participate in external environmental audits with regulatory agencies such as the Texas Railroad Commission, Texas Commission on Environmental Quality, US Bureau of Safety and Environmental Enforcement, Alberta Energy Regulator and British Columbia Energy Regulator. We communicate environmental management issues internally via the

oversight process described on page 52 and externally via this report, as well as through regular stakeholder and shareholder engagement (see page 75) and ongoing community engagement efforts (see page 65).

CLIMATE CHANGE AND GHG EMISSIONS

We understand that our industry, and the use of our products, create GHG emissions – which raise climate change concerns. At the same time, access to affordable, reliable, secure energy is essential to improving the world's quality of life and the functioning of the global economy. We believe that as the energy economy transitions under the Paris Agreement, oil and natural gas will continue to play a vital role in the long-term energy mix.

At Murphy, we are committed to reducing our GHG emissions, and focused on understanding and mitigating climate change risks. To guide our climate change strategy, Murphy has adopted a climate change position, and we are setting meaningful emissions goals. In 2021, we endorsed the Texas Methane & Flaring Coalition's goal of eliminating routine flaring by 2030, under the current World Bank definition of routine flaring. We have also committed to reduce our Scope 1 and 2 GHG emissions intensity by 15% to 20% by 2030 against a 2019 baseline, excluding the Malaysia operations, which we divested in 2019. To support effective emissions reductions, we continue to improve our tracking and reporting of methane and flaring metrics.

In this section, we share our efforts to improve our emissions performance and our climate governance, strategy, risk identification and management and metrics and targets, in alignment with the TCFD core elements.

OUR CLIMATE AND EMISSIONS GOALS AND PROGRESS

15%–20%

REDUCTION

IN SCOPE 1 AND 2 GHG EMISSIONS INTENSITY² by 2030 compared to 2019



ON TRACK

37% REDUCTION

achieved in 2023 compared to 2019

ZERO

ROUTINE FLARING

by 2030



ON TRACK

² Excluding divested Malaysia operations.

Our Climate-Related Reporting

When we became a **Task Force on Climate-related Financial Disclosures (TCFD)** member in 2020, we adopted its framework to disclose climate-related risks and opportunities. The table below outlines the TCFD core elements and topics discussed in this report. For our detailed TCFD Content Index, please see page 97.

TCFD Core Elements		Topics Covered
Governance	The organization's governance around climate-related risks and opportunities	<ul style="list-style-type: none"> • Board Oversight (page 23) • Management's Role (page 23) • Climate Change Position (page 24) • Climate Change Position Trade Association Alignment (page 24)
Strategy	The actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy and financial planning	<ul style="list-style-type: none"> • Climate Scenario Analysis: Overview (page 24) • Climate Scenario Analysis: Methodology (page 27) • Climate Scenario Analysis: Outcomes (page 27)
Risk Management	The processes used by the organization to identify, assess and manage climate-related risks	<ul style="list-style-type: none"> • Identifying Climate Risks (page 28) • Managing Climate Risks and Opportunities (page 28) • Key Climate-Related Transition and Physical Risks (page 28) • Key Climate-Related Opportunities (page 31)
Metrics and Targets	The metrics and targets used to assess and manage relevant climate-related risks and opportunities	<ul style="list-style-type: none"> • Short-Term Metrics and Targets (page 32) • Medium-Term Metrics and Targets (page 32) • Long-Term Metrics and Targets (page 32) • External Assurance (page 32)

Transparent Emissions Reporting

Murphy is committed to transparently reporting, as well as reducing, our GHG emissions. We have maintained an inventory of GHG emissions since 2001 through an internal, annual Worldwide GHG Emissions Report. We have continually refined our emission surveys as we strive for improved measuring and tracking. We report emissions on an operated basis per Ipica/API/IOGP "Petroleum Industry Guidelines for Reporting Greenhouse Gas Emissions, Second Edition," and in accordance with regulation of the following local countries and provinces:

- **United States** – Environmental Protection Agency (EPA) GHG Mandatory Reporting Rule
- **Canada (Federal)** – Canadian Environmental Protection Act
- **Canada (Alberta)** – Emissions Management and Climate Resilience Act
- **Canada (British Columbia)** – Greenhouse Gas Industrial Reporting and Control Act

For other overseas operations, a modified version of EPA's reporting created for our GHG inventory was used. Where necessary, additional source types were added to all assets (e.g., indirect emissions) for consistency across our inventory.

For sustainability reporting purposes, we include all drilling and completions emissions from contracted activities in our Scope 1 data disclosure.

GHG Emissions Definitions

We have adopted the following definitions for our GHG reporting, based on the **Greenhouse Gas Protocol**.

Scope 1 – Direct GHG emissions from sources owned and controlled by Murphy

Scope 2 – Indirect GHG emissions from the generation of purchased electricity consumed by Murphy

Scope 3 – All other indirect GHG emissions as a consequence of Murphy's activities, from sources not owned or controlled by the Company

Improving Our Emissions Performance

We focus our efforts on reducing emissions generated from combustion sources and processes that emit predominantly methane. We expect that these efforts will drive improvement in our management of emissions; help reduce our exposure to climate-related risk, including reduction of regulatory and policy risk; and advance our responsible production of oil and natural gas.

We have made investments to reduce GHG and other emissions, spending approximately \$129 million from 2015 to 2023. We follow a rigorous inspection and preventative maintenance program to keep operations running cleanly and efficiently. Our operations and facility design teams work collaboratively to incorporate GHG reduction technologies and practices into our existing operations and new infrastructure.

In 2021, we formed the Operations Sustainability Focus Team, comprised of operations and HSE specialists, to identify, evaluate and implement technologies to support our corporate climate and emissions strategy and goals. The team maintains a funnel of short- and long-term project ideas prioritized by impact, feasibility and cost (see box below). To support its work, we have also established internal technical sharing sessions that include asset operations, engineering, subsurface activities, drilling and completions, and environmental specialist functions, to share best practices and evaluate technologies and practices across our business units and functions.

We have made progress in reducing our emissions through our targeted efforts. In the last five years, between 2019 and 2023, our absolute Scope 1 and 2 emissions fell by 11%, and total Company Scope 1 and 2 GHG emissions intensity decreased by 37%, putting us on a clear path to achieving our goal of reducing emissions intensity by 15% to 20% by 2030 against a 2019 baseline. We have also met the GHG intensity target defined in our Annual Incentive Plan (AIP) for compensation since its inclusion in 2021 (see our [2024 Proxy Statement](#) for further details).

Capital Allocation Process for GHG Emissions Reduction Investments

Our Operations Sustainability Focus Team maintains an inventory of GHG emissions reduction project opportunities. The Team continually updates this inventory to reflect new learnings and technology advancements, as well as new cost and benefit details.

We are incorporating the use of a Marginal Abatement Cost Curve (MACC) as a screening tool for our annual budget and long-range planning process. The MACC (see chart on right) plots and ranks each project's capital and operating cost net of potential revenues and its associated emissions reduction.

We use the MACC to better understand the impact of each project, which we can then use as a basis for comparing and prioritizing the projects in our inventory. The MACC is one part of a capital allocation process intended to take into account a variety of dimensions of emissions reduction options, including scale, net cost, sustainability and strategic fit.

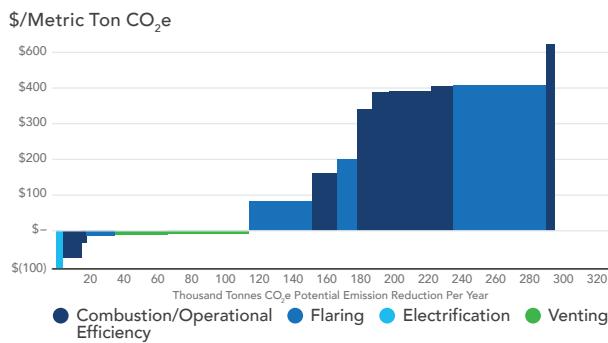
When compared to our peers, the reduction of our annual emissions intensity is strong – for example, it has been well below the IOGP North America industry benchmark (see “Total GHG Emissions and Intensity, and Peer Benchmark” chart on page 17). In addition, our 2030 emissions reduction goal is relatively aggressive. One factor that contributed to meeting our 2030 goal in 2023 is the overall increased production contribution from our low-intensity offshore business, as the King’s Quay facility reaches peak and plateau production.

We continue to explore whether we can maintain our current intensity level, and plan to re-evaluate the 2030 goal depending on production levels of our various assets. We may change these goals at any time and without public notice. We continue to focus on implementing emissions-reducing initiatives, in line with best practices from organizations like the API’s Environmental Partnership and the Texas Oil & Gas Association (TXOGA), to ensure the reductions are sustainable under future increased activities.

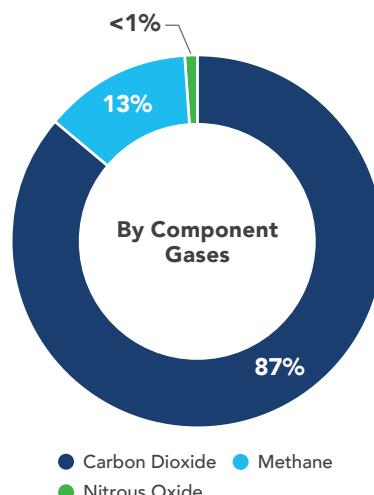
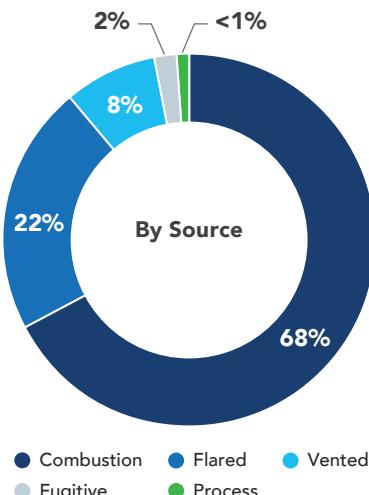
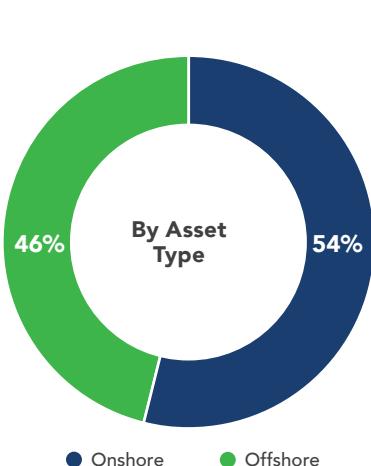
The fact that we are currently exceeding our emissions reduction goal may suggest we could set a larger reduction goal. However, due to pending changes in emissions reporting regulations, including an increase in the emissions sources that will be included in the US EPA’s Greenhouse Gas Reporting Program requirements, likely modifications in emissions measurement and calculations, and changes in production volumes across our assets, we expect that our emissions inventory will increase over the coming years as additional sources are added and better metrics become available. We believe we will be able to maintain our achievement of this goal through 2030, and that doing so reflects a relatively aggressive emissions reduction target that will drive performance improvement across the company.

MARGINAL ABATEMENT COST CURVE

For illustrative purposes only, highlighting a snapshot of select opportunities from our project opportunity inventory.

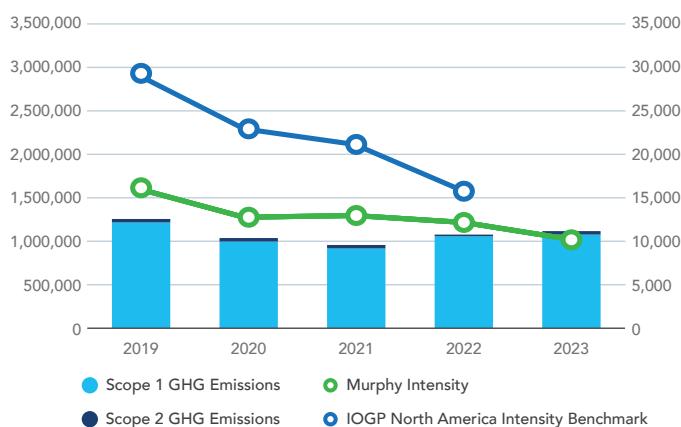


DISTRIBUTION OF 2023 SCOPE 1 GHG EMISSIONS



TOTAL GHG EMISSIONS AND INTENSITY, AND PEER BENCHMARK

Scope 1, 2 GHG Emissions

Metric Ton CO₂e

Source: IOGP and Murphy internal

Improving Our Emissions Performance: Methane

Murphy is highly focused on reducing methane emissions. We are working to develop more targeted and effective methane emissions reduction programs by increasing our understanding of methane emissions from an asset level and by source types. For example, in 2023, 70% of our methane emissions were from our onshore assets, and 48% from onshore pneumatic equipment (see next page). Consequently, our reduction emphasis has been and continues to be on our onshore operations. This may either involve investing in technologies that reduce venting and fugitive emissions or, alternatively, building redundant pipelines to minimize flaring, due to downstream third-party constraints.

MEETING AIP TARGET RANGE GHG INTENSITY METRIC

Since Inclusion in 2021

2021



2022



2023



We regularly assess our methane emissions performance against peers and industry leaders. Using this data as input, we are considering an internal methane intensity goal as a precursor to setting a possible future external goal.

Onshore Methane Reduction Efforts

Venting – Pneumatic Equipment

- Since the end of 2022, we have been focusing on converting natural gas pneumatics on wellpads and facilities to instrument air. In 2023, at Eagle Ford Shale, Texas, we replaced approximately 30% of the natural gas pneumatics on wellpads and facilities and in 2024, we expect to convert at a minimum another 50%, resulting in a total of at least 80%.
- In Canada, from 2024 on, we plan to design all new wellpad developments and wellpad expansions with instrument air (see "Stay With It" box on left of next page).
- In Eagle Ford Shale, 94% of wellpad pneumatic equipment is operating on instrument air instead of instrument natural gas. We anticipate achieving 100% in 2024.
- In place of pneumatics, all new chemical pump installations now utilize electric pumps powered by the grid or solar.

Venting – Other Sources

- Installing piping on new Eagle Ford Shale gas-lifted wells to reduce blowdown-related vented emissions.
- Installing equipment on compressors at Eagle Ford Shale to capture packing vents and reduce related emissions. Packing vents are the second-leading source of compressor emissions (~12% CO₂e per unit of equipment).

Leaks

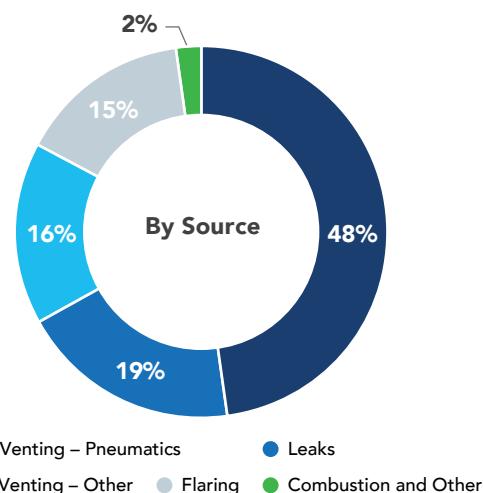
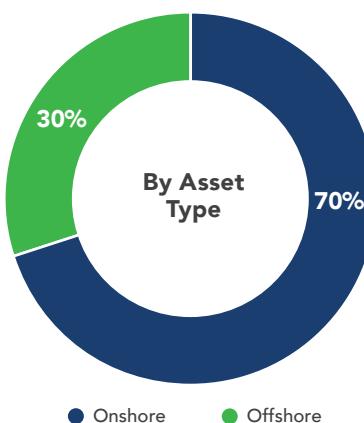
- Utilizing forward-looking infrared (FLIR) cameras, for leak detection and repair (LDAR), to reduce methane leaks by routine monitoring and repairing.
- Continuously monitoring methane and volatile organic compounds (VOCs) at three Eagle Ford Shale facilities, which has improved our ability to identify and resolve leaks quickly. Continuous monitoring has also allowed Murphy to validate the impact of several emissions reduction initiatives, for example, tank Vapor Recovery Unit (VRU), packing vent capture, etc.

- Installed thermal and optical cameras in our onshore Canadian operations for leak and security monitoring. These cameras will be used to support a remote monitoring/wellsite inspection trial in 2024.
- Upgrading emissions equipment on gas dehydration units to reduce the likelihood of leaks.
- Conducting aerial flyover surveys using advanced imaging technologies aimed at detecting emissions across all pipelines, facilities and wellpads at our Eagle Ford Shale and Canada assets. The surveys are conducted via helicopter and provide high-resolution imagery/video footage, to help enable detection of hydrocarbon leaks, including methane. The collected data identifies specific locations with detectable emissions, which are prioritized for inspection and remediation, while also confirming the overall effectiveness of our current maintenance practices.

Flaring

- Focusing on process efficiencies to reduce facility downtime that leads to flaring and venting.
- Implementing new well tubing designs and plunger-assisted gas lift installations to reduce lift gas requirements for artificial lift. In the event there is a process upset, having lower lift gas volumes translates to lower flared gas volumes and fuel gas consumption.
- Adding pipeline infrastructure to reduce flaring and venting at legacy assets.
- Installing electric VRUs to capture gas in the tank vapor space and route to high-pressure compressors instead of flaring (see "Lean Into Challenges" box on right of next page).

DISTRIBUTION OF 2023 METHANE EMISSIONS



STAY WITH IT

Eliminating Methane Vent Sources in Our Onshore Canada Operations

Capturing or eliminating methane from routine venting is a key component of Murphy's GHG reduction strategy. Switching from natural gas to compressed air-driven systems to operate pneumatic equipment and chemical pumps eliminates these venting sources and also provides an economic opportunity, as the natural gas is conserved and sold, rather than being vented.

For every pneumatic device that uses air actuation, 14 to 24 mtCO₂e is eliminated per device, per year, depending on its manufacturer-designed low-bleed³ vent rate. By replacing natural gas-driven chemical pumps with air- or electricity-driven pumps, we can eliminate an additional 5 mtCO₂e per pump per year of vented methane emissions.⁴

3 Low-bleed describes a pneumatic instrument that vents <0.17m³/hr.

4 Pump manufacturer and chemical throughput dependent.

LEAN INTO CHALLENGES

Win-Win: Implementing Efforts to Improve Facility Performance and Reduce Emissions Footprint

In 2023 at Eagle Ford Shale, Murphy undertook efforts to improve facility performance and reduce methane emissions by upgrading several tank batteries. One of the standout features of this upgrade initiative is the adoption of electric tank VRUs. These units, which are aided by improved controls and programming, are designed to capture gas in the tank vapor space and redirect it to high-pressure compressors instead of to flare. Not only does this help to significantly reduce emissions, but it also marks the retirement of less efficient natural gas-driven VRUs, low-pressure separators and centrifugal oil transfer pumps, aligning Murphy's operations with our sustainable and responsible ethos.

We are also increasing the pressure rating and upgrading internal coating on the new tanks, which will further reduce emissions. The internal coating mitigates the risk of corrosion failures and extends tank service life, which will reduce methane stemming from future tank repair and replacement activities. Increasing the pressure rating from 0.5 psi to 1.0 psi reduces methane emissions and enhances operational safety by minimizing leaks from overpressure relief devices and optimizing the performance of tank VRUs.

Murphy's proactive approach also extends to emissions reduction from flare stack operations. We have used additional equipment and programming to optimize existing flare stack smoke assist systems, allowing them to function on an as-needed basis only and further reducing emissions from our facilities.

This forward-thinking approach has set the stage for continued improvements in 2024 and the near term, as we are planning similar projects for the upcoming year. With these types of technology and proactive strategies, Murphy not only enhances operational efficiency but also reduces emissions, making good on our steadfast commitment to innovation and sustainability.

Offshore Methane Reduction Efforts

In 2023, we conducted methane leak detection surveys and completed remedial action to reduce methane emissions (see box below). We are continuing to evaluate reduction opportunities and monitor technology advancements for offshore methane mitigation. Our evaluations thus far indicate that investing in onshore methane reductions will have substantially more impact than offshore investments.

DO RIGHT ALWAYS

Tackling Fugitive Emissions in Our Offshore Gulf of Mexico Operations

In 2023, Murphy initiated a pilot program to identify and quantify fugitive emissions originating from flange connections that were undetectable to the naked eye. This program used Optical Gas Imaging (OGI) cameras for the inspection and provided the locations of any minor leaks along with the estimated volume/rate of the leak. We have completed the leak detection inspection of flange connections on two of our five offshore facilities. As a result of this work, we identified and repaired over 350 flanged connections with leaks, which would have been undetected without this technology. Using the results of this pilot program, we will evaluate the expansion of the program to the other facilities.

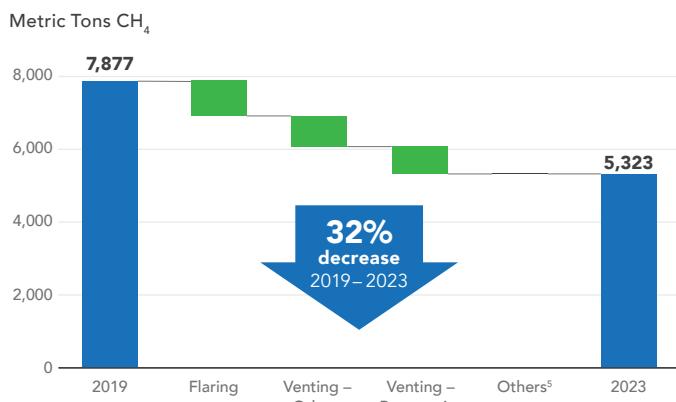
Impact of Reduction Efforts

As a result of our focused programs, we have reduced absolute methane emissions by 32% from 2019 to 2023, with reductions coming mostly from venting and flaring. Our total Company Scope 1 methane intensity decreased by 51% from 2019 to 2023.

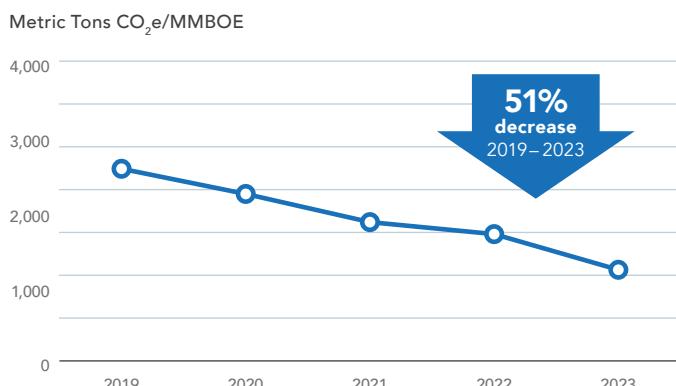
We continue to seek improvements to reduce our methane emissions and partner with industry groups to achieve these goals, including with the TXOGA and API's Environmental Partnership. Consequently, if our operations perform as planned, we anticipate seeing further reductions in both absolute methane emissions and intensity for 2024.

We regularly assess our methane emissions performance against peers and industry leaders. Using this data as input, we are considering an internal methane intensity goal as a precursor to setting a possible future external goal.

METHANE EMISSIONS⁵



METHANE INTENSITY



⁵ Scope 1 methane emissions.

"Others" category includes leaks, combustion and process emissions. For 2023 process emissions, the methodology for calculating process (dehydrator) emissions was revised to account for the dehydrator vent streams being routed back to process instead of being routed to the flare.

Methane Emissions Quantification and Measurement

We currently quantify methane emissions using engineering calculations, measurements, emissions factors, activity factors and manufacturers' specifications, as prescribed by the regulatory agencies where we operate. This is consistent with the Oil & Gas Methane Partnership 2.0 (OGMP 2.0) Level 3. We have evaluated and continue to evaluate various direct measurement technologies at site and source level, including aerial surveys and fixed continuous monitoring devices. While there are significant challenges with these direct measurement technologies today, we will continue our efforts to monitor and evaluate them, as we understand that this is an area of interest to our stakeholders.

Improving Our Emissions Performance: Combustion

Combustion of fuel to run equipment, while critical to our operations, also represents a large source of emissions. These emissions are primarily driven by operational activity. Managing energy consumption and improving operational efficiency of our combustion practices reduces associated GHG emissions, as well as emissions of nitrogen oxide (NO_x), sulfur oxide (SO_x) and VOCs. Strategies we are using to reduce combustion-related emissions include:

- **Onshore fracturing** – Murphy has shifted to using dual-fuel fracturing fleets in the Tupper Montney and Kaybob Duvernay in Canada and in the Eagle Ford Shale. Dual-fuel fleets partially displace diesel consumption with natural gas, or with field gas, where it is readily available, or with compressed natural gas (CNG). This is expected to reduce both GHG and NO_x emissions. In the Eagle Ford Shale, we continue to evaluate the use of electric fracturing units.
- **Onshore drilling** – In Tupper Montney and Kaybob Duvernay, we use dual-fuel drilling rigs. By piloting dual-fuel drilling rigs in the Eagle Ford Shale in 2022, we learned that there could be engine efficiency challenges and that trucking CNG to drilling locations was not cost effective. Going forward, we will evaluate the use of dual-fuel drilling rigs only in areas where natural gas can be sourced directly without trucking to the drilling sites. In 2024, at Eagle Ford Shale, we will pilot deploying a battery storage system on a drilling rig to reduce diesel fuel usage.
- **Truck transportation** – We have installed pipelines to replace truck transportation of oil and water in our operating fields whenever practical and cost-efficient.
- **Natural gas compressors** – In our onshore operations, we continue to add the latest catalyst technology. We also continued efforts with our compressor rental service provider to improve compressor runtimes and engine efficiency.
- **Electrification** – We continue to electrify facilities, pumping units and instrument air compressors. For instance, Murphy began installing electric tank VRUs, which allowed for the decommissioning of less efficient natural gas-driven VRUs, low-pressure separators and centrifugal oil transfer pumps. We also installed our first electric-powered, on-pad gas lift compressor.

Improving Our Emissions Performance: Flaring

Flaring of natural gas is a controlled process for eliminating emissions of methane and VOCs. This elimination is necessary for safe operations within the oil and natural gas production process. Murphy is committed to limiting flaring at all of our locations, to protect the environment and to capture as much natural gas as reasonably possible to sell. Our first choice is always to eliminate flaring through natural gas conservation. Per the US Bureau of Safety and Environmental Enforcement (BSEE) regulations, we conduct zero routine flaring at our Gulf of Mexico offshore facilities. In 2021, we endorsed the Texas Methane & Flaring Coalition's goal of eliminating routine flaring by 2030, under the current World Bank definition of routine flaring.

Our process improvement and asset reliability efforts to reduce flaring include:

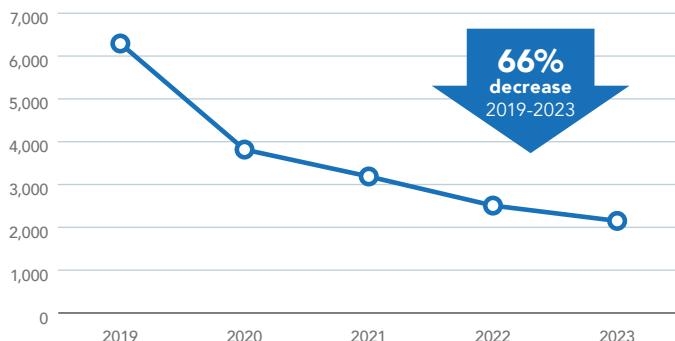
- Eliminating flare stacks from the design of new facilities in our Tupper Montney operations. The new designs use automated pressure controls to shut the wells in automatically, to eliminate flaring. We have also continued to decommission certain existing flares in Tupper Montney to reduce emissions from the continuous pilot flare.
- Implementing facility slugging-prevention projects in the Eagle Ford Shale to reduce process fluctuations and upsets, thereby reducing downtime and flaring.
- Removing optionality to flare during flowback operations on our Eagle Ford Shale Tilden and Catarina wellpad designs.
- Extending our operated flowline and pipeline network and using third-party underutilized pipelines and infrastructure, where possible, to boost natural gas handling capabilities; this reduces flaring and increases our natural gas sales. For example, we reduced gas transport constraints in the Eagle Ford Shale through the addition of secondary natural gas sales points.
- Introducing electronic control upgrades, in both our US and Canada onshore operations, to reduce upsets and provide data for continuous operational improvement.
- Installing electric VRUs to capture gas in the tank vapor space and route to high-pressure compressors instead of the flare.
- Improving our overall equipment reliability in the Eagle Ford Shale, to drive down failures that can result in flaring.
- Monitoring flaring remotely at our Eagle Ford Shale wellpads through infrared optical cameras and other cameras.

Impact of Reduction Efforts

Between 2019 and 2023, our flaring intensity on a mtCO₂e per MMBOE basis fell by 66%. As we work to achieve our commitment to reduce flaring, we anticipate continued improvement in the methane intensity of assets under our operational control.

FLARING INTENSITY

Metric Tons CO₂e/MMBOE



OFFER SOLUTIONS

Managing Stranded Wells to Eliminate Routine Flaring and Conserve Natural Gas

Our Engineering and Operations teams continue to work to find ways to connect onshore stranded well locations to pipelines, to reduce routine flaring and increase revenue from natural gas being sold. A stranded well is an oil well that does not have a natural gas sales connection.

In our Canada operations, we identify potential pipeline routing options to flow production from several existing wellpads with stranded wells. Further, any new wellpads would be connected to the infrastructure to eliminate flares and other equipment that would have vented natural gas to the atmosphere. The team can also propose options for tie-ins to third-party pipelines, to eliminate flaring at all sites. All these options are evaluated internally, as required by the regulator.

In our US onshore business, we worked to eliminate wellpad tanks and flares at two additional locations in 2023. Instead of producing oil and water to on-pad tanks, liquid and natural gas production is routed to a central facility via pipeline. These tie-ins eliminate on-pad flaring and on-pad tanks and equipment that cause venting to the atmosphere.

Committing to Emissions Reductions and Industry Partnership

Murphy is one of the 26 founding members of [the Environmental Partnership](#), launched by the API in 2017. The Partnership, which includes 65 participating oil and natural gas producers, is focused on voluntarily reducing emissions from oil and natural gas production through a series of best practices that members commit to implementing. As a member, Murphy has committed to and is working to achieve the following:

- **Implementing LDAR programs** – at all relevant assets, including regular optical gas imaging and timely repair of identified leaks.
- **Replacing high-bleed pneumatic controller emissions** – by designing new facilities to utilize air-actuated devices and working to replacing natural gas-actuated systems in existing facilities with primarily air-actuated systems.
- **Reducing emissions from pipeline blowdowns** – by reducing pressure and natural gas volumes prior to pipeline blowdowns, and when possible, routing natural gas to flare for destruction.
- **Implementing flaring-reduction best practices** – by following a range of best practices (see Improving Our Emissions Performance: Flaring, page 21).

We also believe that industry knowledge sharing is key to the rapid, successful deployment of emissions reduction technologies. In 2023, Murphy hosted a GHG Management roundtable organized by Darcy Partners, a technology scouting firm that helps exploration and production operators identify innovative technologies and best practices. This event brought together 50 industry experts from 28 operating companies to share innovative technology pilots and discuss practical strategies for emissions reduction. Notably, in a post-event survey, 77% of the respondents indicated that they discovered new technologies or best practices to reduce their carbon footprint. Some of these operators have subsequently deployed these emissions-reducing technologies, underscoring the significant value and impact of fostering industry collaboration.

Opportunities for the Future

In addition to emissions reduction efforts outlined above, we continue to evaluate low-carbon energy and CO₂ mitigation opportunities. These include:

- Internal evaluations of geothermal energy to offset power generation from fossil fuel-based sources.
- Collaboration with the Educational Foundation of America and Mitchell Foundation, including funding a 2023 report on "The Future of Geothermal in Texas."
- Investigation of potential for CO₂ sequestration projects through strategic partnerships.
- Evaluation of solar energy project potential for our current operating areas.
- Evaluating consolidation of production facilities to fewer central processing facilities.

Although none of these opportunities are operational at present, Murphy continues to dedicate resources to advance their commercial and technical feasibility.

Scope 3 Emissions

Scope 3 emissions are other indirect emissions that occur as a result of Murphy's activities, but from sources not owned or controlled by the Company. As an exploration and production company, we have limited to no control over Scope 3 emissions.

We use the guidance prescribed in the "Estimating Petroleum Industry Value Chain (Scope 3) Greenhouse Gas Emissions: Overview of Methodologies," published by Ipieca in 2016, to estimate our Scope 3 emissions. The "GHG Protocol Scope 3 Standard," published by the World Resources Institute and the World Business Council for Sustainable Development in 2011, classifies Scope 3 emissions into 15 categories. In establishing the boundary of our Scope 3 inventory, we have determined that only one of the 15 categories is material to our GHG inventory: Category 11: Use of Sold Products. We will continue to evaluate the other categories for materiality and report accordingly.

There is continuing debate and development of standards for estimating Scope 3 emissions, partly because much of a company's Scope 3 emissions are also counted in other companies' Scope 1 and 2 emissions. We will continue to monitor these developments in accepted standards. We also participate in Ipieca's Scope 3 Task Force of its Climate Change Group.

The table below outlines our estimated Scope 3, Category 11 emissions for 2020 to 2023, on a net equity production basis.

Estimated Scope 3 Net Equity Emissions	2020	2021	2022	2023
Category 11: Use of Sold Products Metric Ton CO ₂ e	21,500,000	20,600,000	21,900,000	24,300,000

Climate Governance

Our Board and senior management are actively engaged in overseeing our climate change and emissions strategy, which is based on our climate change position (see page 24).

Board Oversight

The Board is committed to overseeing climate-related risks and opportunities, as well as overseeing the executive leadership team in its assessment, agenda-setting and strategic initiatives. We have established processes for performance and risk assessments, which are informed by experts from within and outside the organization, as well as by the executive leadership team. Our Board members' climate-related expertise can be viewed in the Skills and Expertise Matrix in our [2024 Proxy Statement](#).

The HSE&CR Committee of the Board has specific responsibility for overseeing issues related to Murphy's climate and emissions strategy, performance and external reporting. Additionally, the Audit Committee has oversight of our Enterprise Risk Management (ERM) process, which covers climate-related risks, while the full Board reviews the ERM outcomes. The Compensation Committee aligns our compensation program with our environmental and climate goals, as well as performance. Please refer to Board and Managerial Oversight of ESG Topics (see page 11) for more details on the responsibilities of these Board committees, as well as the individual [Board Committee Charters](#).

Climate-related information is reviewed at least biannually during the HSE&CR Committee meetings, as well as through frequent updates to the Board, to help ensure our members are apprised of climate matters. At least annually, external experts present to the Board on a broad range of topics related to climate and sustainability. Additionally, our own internal personnel from Government Affairs, Enterprise Risk Management, Corporate Planning, Sustainability, HSE and Operations provide updates on relevant topics, including but not limited to:

- Strategy and initiatives relating to climate change policy and energy transition pathways
- Significant legislation or regulations, treaties, conventions or other agreements, public policies or scientific developments involving environmental matters
- Significant risks to, and the physical security of, the Company's facilities
- The Company's annual GHG inventory and progress against climate-related goals, including our 2030 goals for Scope 1 and 2 GHG emissions reduction intensity and zero routine flaring
- Climate-related scenarios and energy transition matters
- Impact of climate-related risks and opportunities on our capital allocation process for our budget, long-range business plan and strategy

Management's Role

Our ESG Executive Management Committee, comprised of the Chief Executive Officer and senior executives, provides executive direction on and oversees the identification and management of climate-related risks and opportunities, and delegates responsibilities to relevant working groups. To keep abreast of climate-related issues and trends, the committee is briefed by employees who participate in industry associations, think tanks and policy discussions. See Climate Risk Management (page 28) for more detail.

This ESG Executive Management Committee reports to the HSE&CR Committee and coordinates closely with our HSE Executive Management Advisory Committee. The HSE Executive Management Advisory Committee includes the Chief Executive Officer and senior executives and management from HSE and operations, and is responsible for executing on our environmental strategy.

Further, we have a Capital Allocation Investment Committee made up of the Chief Executive Officer; Executive Vice President and Chief Financial Officer; President and Chief Operating Officer; and senior finance leaders who oversee capital allocation, including climate- and emissions-related investments.

Additionally, members of the Risk Committee – including the Executive Vice President and Chief Financial Officer; Executive Vice President, General Counsel and Corporate Secretary; President and Chief Operating Officer; other senior executives and the Enterprise Risk Manager – identify, prioritize and assign owners to risks, including climate-related risks, with reporting lines up to the Board or applicable Board committee(s), as discussed under Enterprise Risk Management (see page 76).

As mentioned in the Board and Managerial Oversight of ESG Topics section (see page 11), the Operations Sustainability Focus Team, comprised of Operations and HSE specialists, is responsible for identifying, evaluating and implementing technologies to support our corporate climate and emissions strategy and goals.

Climate Change Position

We originally developed a set of climate change principles in 2008 to guide our climate strategy. In 2021, we reviewed and updated these principles into our current climate change position, with the commitment to re-evaluate the position periodically with our executive leadership team and HSE&CR Board Committee. As part of our **climate change position**, we endeavor to:

- Provide strong internal oversight and governance
- Communicate with transparency
- Further integrate risks and opportunities into our strategy and business planning cycle
- Promote operational excellence to minimize impact to the environment
- Collaborate with stakeholders and promote responsible policy solutions

Trade Association Alignment

Our positions on key ESG issues do not always align exactly with those of the industry associations and other groups of which we are members. Therefore, our membership does not necessarily indicate our support for all the organizations' positions. To understand the alignment of our climate change position, highlighted above, with that of our key trade associations, we conducted an assessment in 2022. We selected organizations that received more than \$50,000 a year from Murphy, and identified three associations: the API, Canadian Association of Petroleum Producers (CAPP) and National Ocean Industries Association (NOIA). Our analysis concluded that our climate change position is consistent with that of these three associations.

Climate Strategy

Our strategy and asset portfolio position the Company to deliver on the dual challenge of providing affordable, reliable and secure energy, while lowering the intensity of emissions associated with our activities. Through our annual strategic planning and capital allocation process, we build a strategy and business adaptable to alternative low-carbon pathways, by providing a qualitative and quantitative perspective of energy transition risks and opportunities. A key aspect of this process is climate scenario analysis, as described below. Our risks fall into the following broad climate-related issues most relevant to our business model:

- **Regulatory** – Policies and regulations related to GHG emissions and climate change, covering the short and medium term.
- **Market transition and reputational** – Global demand change toward non-fossil fuel energy sources, covering the short to long term.
- **Physical** – Severe weather events, covering the short term and beyond.

Elements of the above-mentioned issues manifest themselves over different time horizons. We consider the following horizons when assessing and planning for risks and opportunities:

- **Short-term** – one to three years, which includes our annual budget and reporting period and allows for the realization of near-term operational decisions.
- **Medium-term** – four to eight years, which includes our planning cycle and captures strategic initiatives such as the materialization of exploration ventures and further capital allocation into larger assets.
- **Long-term** – beyond eight years, and evaluated more fully against the external scenarios that represent alternate transition pathways and the underlying policy, technical and market assumptions, such as those defined by the International Energy Agency (IEA).

We also see significant opportunities over similar time horizons. A detailed discussion of these risks and opportunities can be found in the Climate Risk Management section (see page 28).

Climate Scenario Analysis: Overview

The scenario work of the IEA helps inform our view of long-term energy fundamentals. In particular, the Stated Policies Scenario (STEPS), Announced Pledges Scenario (APS) and Net Zero Emissions by 2050 Scenario (NZE), as presented in the World Energy Outlook (WEO) 2023, frame potential oil and natural gas demand, as well as technology, policy and societal requirements tied to energy transition pathway objectives.

The STEPS reflects the impact of announced policy intentions and targets – or Nationally Determined Contributions (NDCs) – submitted by the Paris Agreement signatories to reduce their emissions. This scenario projects oil demand will peak before 2030. Specifically, oil demand is expected to increase by 5% by 2030 and then gradually decrease to 2022 levels by 2050. Similarly, natural gas demand grows modestly by 3% to 2030 and then returns to 2022 levels by 2050. This scenario projects that the global average temperatures will reach around 2.4°C above pre-industrial levels in 2100.

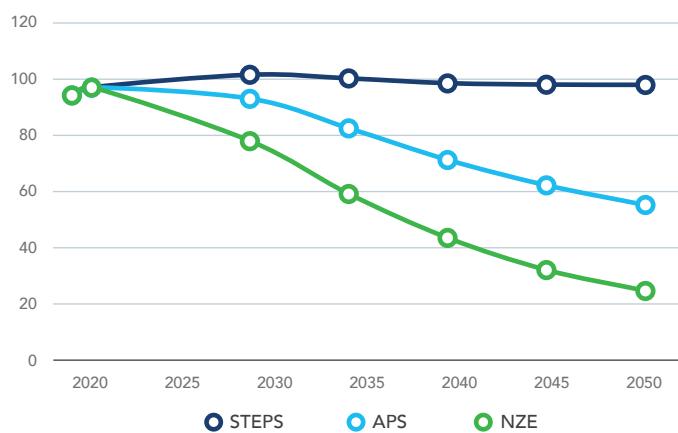
The APS assumes that all climate commitments made by governments around the world, including NDCs and longer-term net zero and energy access targets, will be met in full and on time. This scenario projects that oil demand will peak in the 2020s, after which it is anticipated to fall by 43%, with natural gas demand decreasing by 42% by 2050. Under this scenario, the global average temperature rise in 2100 is around 1.7°C.

The NZE is more ambitious and goes further than the APS to align with the Paris Agreement objective of pursuing efforts to limit the temperature increase to 1.5°C. The NZE shows a narrow pathway to achieve net zero emissions by 2050 and does not rely on action in areas other than the energy sector. This scenario is highly dependent on several factors including: the timing and emergence of new innovations and technologies, the willingness of society to change behaviors, and global, lasting co-operation and policy changes. The NZE requires that oil demand fall by 75% and natural gas demand by 78% by 2050.

GLOBAL OIL AND NATURAL GAS DEMAND

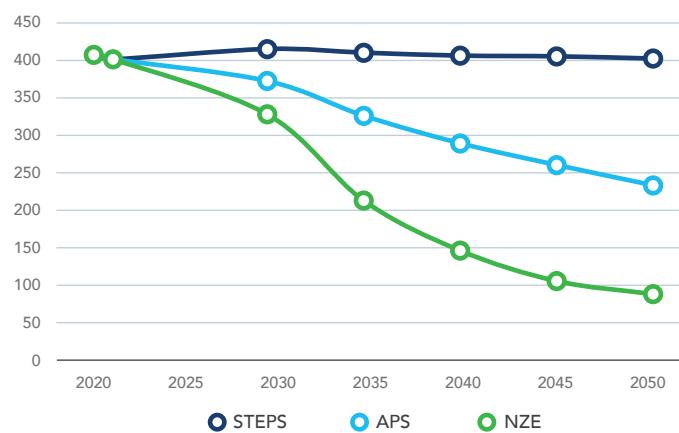
Oil

Million Barrels per Day



Natural Gas

Billion Cubic Feet per Day

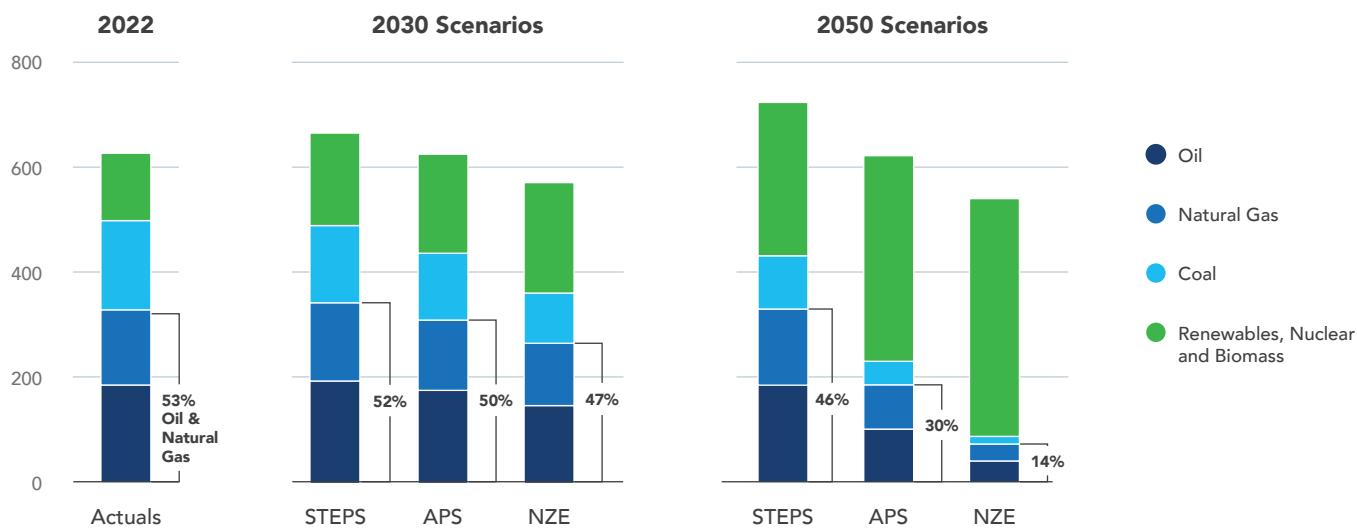


Source: IEA World Energy Outlook 2023

The IEA highlights the important role that both oil and natural gas continue to play in the energy mix in the STEPS and APS. By 2030, oil and natural gas combine to meet 52% (STEPS) and 50% (APS) of the overall world energy demand, respectively. Even by 2050, oil and natural gas remain key at 46% (STEPS) and 30% (APS). Due to natural depletion of existing production supply, there is a need for continued significant investment to meet these demand predictions. In the STEPS, investment in upstream existing and new fields in 2030 is around \$525 billion, a similar level to 2023. By 2050, it drops to \$425 billion. In the APS, investment in 2030 is \$455 billion and in 2050 is \$195 billion.

GLOBAL ENERGY DEMAND BY FUEL

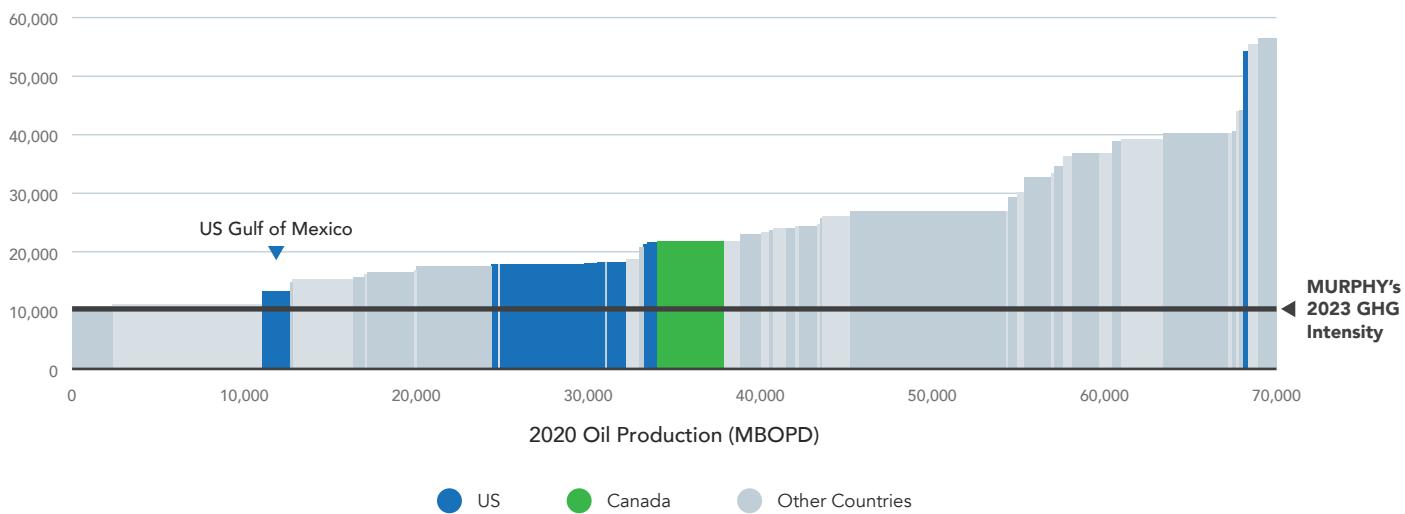
Exajoules (EJ)



Source: IEA World Energy Outlook 2023

GLOBAL OIL PRODUCTION VOLUMES AND PRODUCTION GHG INTENSITY⁶

Production GHG Emissions, Metric Ton CO₂e/MMBBL



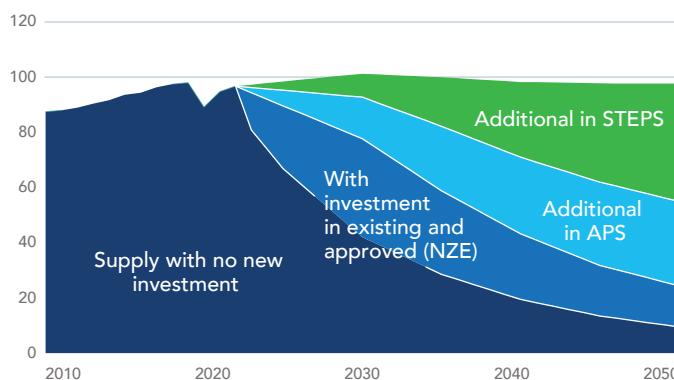
Source: NOIA and ICF

⁶ GHG intensity is from the production stage only (that is, exclusive of crude transport, refining, petroleum product transport, petroleum product distribution and dispensing, and petroleum production utilization). The quantity of oil for each US region and foreign country is indicated by the width of each rectangle. The gray rectangles are individual foreign countries.

We believe our strategic positioning enables the Company to contribute to the replacement of oil and natural gas supplies over this time horizon. Our existing portfolio reflects resources that can be developed and produced at an emissions intensity per unit of production that is lower relative to other sources on the supply curve, as highlighted in the chart above. Our oil production is primarily from the US.

GLOBAL OIL SUPPLY

Million Barrels per Day



Source: IEA World Energy Outlook 2023

In the NZE, demand for oil and natural gas drops to levels that do not require new field developments beyond those already approved. However, investment in existing fields continues, with the annual upstream oil and natural gas investment averaging about \$265 billion in 2030 and about \$65 billion in 2050. In the WEO 2021, the IEA highlights that if demand is higher than assumed in the NZE, the reduced investment in new fields would cause a supply shortage, leading to higher and more volatile prices. It further states that to counter this, a strong policy push to reduce oil and natural gas demand is required to meet the emissions goals of the NZE and to avoid the risk of market tightening. These statements hold true for WEO 2023's NZE scenario.

Climate Scenario Analysis: Methodology

We consider the APS and NZE when analyzing the resilience of our strategy. We also apply the associated crude oil, natural gas and CO₂ price projections to our annual Long Range Plan (LRP) base case through the end of life of our existing and known future producing assets. We do not consider the STEPS, as the associated price projections are significantly more favorable than our internal base price decks. The figures on page 28 reflect price projections from the STEPS, APS and NZE, along with the Murphy base case.

The Murphy base case internal carbon price is \$50 per mtCO₂e, escalated 5% per annum, and applicable to our Scope 1 and 2 emissions on a net production basis. Currently, only our Canadian operations are under a carbon price regulatory program. However, by implementing an internal carbon price across our entire portfolio, we gain insights into the potential impact of future carbon regulations. The carbon price also provides a mechanism to standardize evaluation of emissions reduction opportunities across our portfolio.

Climate Scenario Analysis: Outcomes

Relative to our internal forecasts, the APS forecasted oil price is slightly more optimistic, while the APS forecasted US natural gas price is slightly more pessimistic. The APS carbon price assumption is markedly higher than our internal carbon price assumption.

When we applied the APS oil, natural gas and carbon price projections and compared the impact to the net present value (NPV) of our portfolio of existing and known future producing assets, the Murphy portfolio value remained relatively flat to our LRP base case. The optimistic APS oil price offset the unfavorable effects of carbon pricing. We believe our current portfolio of existing and known future producing assets is resilient under the "well below 2°C" transition pathway, as represented by the APS. As we perform the scenario analysis, we also confirm that our 2030 GHG emissions intensity target is still viable.

Maintaining the resilience of our strategy will continue to be a priority. We believe that there is no conflict between leveraging the strength of our portfolio to deliver healthy returns while also continuing to lower our Scope 1 and 2 emissions intensities.

The NZE's significantly lower oil and natural gas prices, coupled with a much higher carbon price, result in lower NPV than our LRP base case. As discussed earlier, the NZE is highly dependent on many complex factors coming together in a relatively short timeframe. However, should aspects of the NZE scenario play out, our portfolio allows us the optionality to shift to the Tupper Montney natural gas asset in Canada. This presents an opportunity that is discussed further in the Climate Risk Management section (see page 28). Like the APS, in this scenario, our 2030 GHG emissions intensity target remains viable.

We run our internal scenarios using IEA guidance; however, IEA's NZE narrow pathway is only one of many pathways that limit temperature change to 1.5°C by the end of the century. Accordingly, we are also using a wider range of equally credible sources to inform our thinking about the full spectrum of potential future business environments and transition pathways. These include multiple pathways from the latest assessment of the Intergovernmental Panel for Climate Change (IPCC), modeling results from the Massachusetts Institute of Technology's Joint Program on the Science and Policy of Global Change, and scenarios provided by S&P Global Commodity Insights, ©2024 by S&P Global Inc. We believe the major differences between these sources and IEA's NZE scenario tend to be:

- Taking into account other possible sources of GHG reductions in addition to energy system emissions reductions.
- Assuming less immediate and stark reductions in fossil fuel use, partly reflecting attempts to predict the timing of regulations.
- Predicting more moderate impacts on commodity prices through 2050, particularly natural gas prices.
- Expecting a slight overshoot of the 1.5°C target in the middle of the century before a return to 1.5°C by 2100, viewed by some of these sources as inevitable.

From our view, these alternate sources suggest that the loss of oil revenue opportunities will likely not be as stark as indicated by the IEA NZE, and that there are likely to be profitable natural gas opportunities well into the energy transition.

We also considered the impact of the IEA APS and IEA NZE pathways on our year-end 2023 proved reserves. Our analysis indicates that in the APS scenario, impact is negligible. However, in the NZE scenario, we see some limited impact, in the 2050 timeframe.

COMMODITY PRICE SCENARIOS⁷

Crude Oil

2024 Real \$ per Barrel



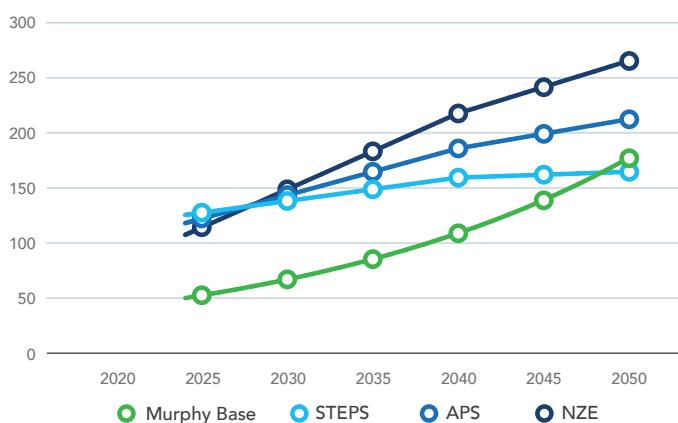
US Natural Gas

2024 Real \$ per MMBTU



CO₂

2024 Real \$ per Tonne



Source: IEA World Energy Outlook 2022

⁷ Interpolation was necessary for the IEA price projections, since the IEA only publishes decadal milestones. The carbon price has already been netted out of the commodity prices, and is therefore applied to our Scope 1 and 2 equity emissions, and not to Scope 3.

Climate Risk Management

Identifying Climate Risks

Through our ERM process – described in the Governance and Responsible Business Practices section (see page 76) – we identify, assess, evaluate, mitigate and monitor our climate-related risks. We determine the likelihood and impact on a qualitative scale, and rank and prioritize the identified climate-related risks against other risks.

Our views on climate-related risks are shaped by internal and external insights gained from climate policy discussions at federal, state, provincial and local levels; energy outlooks from the IEA and others; industry associations and think tanks. For example, Murphy participates in several external associations:

- We are members of the API and NOIA. We are active in many committees of these associations, including the climate and ESG committees, as they work on addressing climate-related issues. As mentioned in the Climate Governance section (see page 23), in 2022, we assessed our climate change position with that of these associations and concluded that we are consistent.
- We joined **Ipieca**, a non-lobbying group, in 2019, and are members of several of its working groups, including Climate Change, Environment, Reporting and Water. Ipieca leads engagement with United Nations agencies on behalf of its membership and has an ongoing record of convening expert workshops to explore key climate-related issues, informing the industry and stakeholders.
- We have been a sponsor of the **Massachusetts Institute of Technology (MIT) Joint Program on the Science and Policy of Global Change** since 1998. The research conducted at MIT is valuable to government agencies, which aim to formulate efficient and effective policies, to industries that aim to create risk management strategies, and to other decision makers, who value a systemic view of the broad interactions inherent in global change.

Managing Climate Risks and Opportunities

As we seek to maximize the long-term value of our assets, we know that we must manage foreseeable short-, medium- and long-term risks and opportunities, including those related to climate change. Through our ERM process, we have identified the following key climate-related transition and physical risks that might impact our strategy, and are actively managing mitigation efforts.

Key Climate-Related Transition and Physical Risks

Our reporting in this section is guided by the TCFD framework and the references to climate risks and opportunities, including transition and physical risks, are intended to align with this framework. The terms used herein are intended to be consistent only with their meaning under the TCFD framework. The disclosure of the information does not represent our belief regarding the materiality of that information under the federal securities laws. For a discussion of information that is material to Murphy Oil, please see our filings with the US Securities and Exchange Commission (SEC), including our Annual Reports on Form 10-K and Quarterly Reports on Form 10-Q.

Type	Risk Description	Potential Time Horizon	Potential Financial Impacts	Mitigation Strategies
Transition: Policy and Legal	Policies/regulations related to GHG emissions, climate change, reporting obligations, carbon pricing and exposure to litigation.	Short- and medium-term	<ul style="list-style-type: none"> Increased operating expenses Increased cost of capital Write-offs, asset impairment and early retirement of existing assets due to policy changes 	<p>Murphy has developed focus areas to streamline our approach:</p> <ul style="list-style-type: none"> Monitoring policy and regulatory proposals for specific risks to our business, by our Enterprise Risk Management, Government Affairs and Regulatory personnel. Increasing internal awareness and transparency to increase communication both within and across business units, ensuring that cross-functional disciplines are aware of their contribution to emissions and opportunities for improvement. Enhancing data quality and tracking to provide higher-quality data, processes and consistency for improved benchmarking and setting key performance indicators (KPIs) and emissions reduction targets. Improving external reporting and disclosure to highlight to our employees and shareholders, in addition to our other stakeholders, our understanding of and commitment to climate change initiatives. Utilizing a process for evaluation and innovation, ensuring that our technical experts have access to the latest technological advancements and opportunities for participation in research and development, and increasing our ability to effectively evaluate solutions and act quickly upon opportunities. <p>For more information, see Improving Our Emissions Performance in this section (see page 16).</p>
Transition: Market	<p>Two key potential risks of the market transitioning away from fossil fuels and into lower-carbon emission sources are:</p> <p>Fossil-Fuel Business Model Disruption – Technologies for using energy from non-emitting sources have developed rapidly over the last two decades and, in some cases, the usage cost has been decreasing at a noticeably faster rate than previously anticipated.</p> <p>If consumers embrace less carbon-intensive sources, partly motivated by carbon pricing, demand could drop and significantly impact long-term net oil and natural gas prices.</p> <p>Reserves Estimation – Carbon prices will impact calculations of future reserves.</p>	<p>Medium- to long-term</p> <p>Medium- to long-term</p>	<ul style="list-style-type: none"> Decreased revenue from reduced prices/demand for oil and natural gas Increased cost of capital <ul style="list-style-type: none"> Write-offs, asset impairment and early retirement of existing assets Increased cost of capital 	<p>There is a large range of uncertainty about future rates of change, and timing is unknown.</p> <p>We continue to investigate low-carbon technologies that complement our existing assets, strategy and competencies. As discussed above, the IEA alternative transition pathways suggest that oil and natural gas will continue to play a significant role in future energy demand. We will remain disciplined in our capital allocation, to ensure that our future investments are competitive in these various pathways.</p> <p>We use an analytical framework that includes scenario analysis to help us understand and manage this risk.</p> <p>Our Risk, Reserves and Planning functions work collectively with management and the Board to understand the potential impact and maintain our capital discipline.</p>

Time horizon definitions: short-term – one to three years; medium-term – four to eight years; long-term – beyond eight years

Type	Risk Description	Potential Time Horizon	Potential Financial Impacts	Mitigation Strategies
Transition: Reputation	Change in public sentiment for the fossil-fuel business could lead to negative perceptions of the industry, causing: <ul style="list-style-type: none"> • Investors and insurers to withdraw from the industry. • Increased activism and legal challenges. • Reduced ability to attract and retain talent. 	Short-term and beyond	<ul style="list-style-type: none"> • Increased cost of capital • Increased insurance premiums • Increased operating and overhead expenses • Deferred revenue in the event of legal obstacles to operations • Decreased revenue from reduced prices/demand for oil and natural gas 	<p>Per our Climate Change Position, we will communicate with transparency on our progress on climate efforts at least annually, through the publication of our Sustainability Report.</p> <p>We actively engage with our stakeholders regularly to share our strategy, goals and progress and to receive their feedback, as outlined in our Stakeholder Engagement section (see page 75).</p> <p>The Investing in Our People chapter (see page 59) highlights our strategies and efforts to identify, attract and retain employees, from building a pipeline of future employees to offering competitive compensation and benefits packages and providing opportunities to advance their careers.</p>
Physical: Acute	Our US and international operations are exposed to different types of physical risks, such as tropical systems, floods and other forms of severe weather.	Short-term and beyond	<ul style="list-style-type: none"> • Deferred revenue from deferred production • Increased operating expenses • Property damage, liability for third-party damage • Increased insurance premiums • Property damage to customer and supplier assets 	<p>We have robust safety protocols in place, and we maintain thorough emergency response and crisis management plans. As described in the Protecting Our People section (see page 51), Murphy performs exercises and drills based on different scenarios for all our business areas.</p> <p>Additionally, we have experience in responding to actual events, such as the devastating floods experienced in Houston in 2017 after Hurricane Harvey and Winter Storm Uri in 2021.</p>
Physical: Chronic	Shifts in precipitation patterns and variability in weather patterns could cause prolonged or excessive conditions related to heat, drought, rainfall, cold spells, wildfires, rising sea levels, etc.	Short-term and beyond	<ul style="list-style-type: none"> • Deferred revenue from deferred production • Increased operating expenses • Property damage, liability for third-party damage • Increased insurance premiums • Property damage to customer and supplier assets 	<p>In addition to the mitigation strategies outlined above for Physical Acute Risks, we also monitor the condition of our assets and infrastructure, as discussed in the Asset Integrity and Process Safety section (see page 44).</p> <p>Our Water Management Strategy and Risk Management (see page 34) helps us mitigate risks and potential impacts related to freshwater scarcity. We continue to invest in infrastructure to reduce our dependence on fresh water and increase use of recycled water and other alternative sources. We also seek innovative solutions involving other operators and third-party services.</p>

Time horizon definitions: short-term – one to three years; medium-term – four to eight years; long-term – beyond eight years

Key Climate-Related Opportunities

Our reporting in this section is guided by the TCFD framework and the references to climate risks and opportunities, including transition and physical risks, are intended to align with this framework. The terms used herein are intended to be consistent only with their meaning under the TCFD framework. The disclosure of the information does not represent our belief regarding the materiality of that information under the federal securities laws. For a discussion of information that is material to Murphy Oil, please see our filings with the SEC, including our Annual Reports on Form 10-K and Quarterly Reports on Form 10-Q.

Type	Opportunity Description	Potential Time Horizon	Potential Financial Impacts	Ongoing or Future Initiatives
Resource Efficiency	Improved methane capture	Short-term	<ul style="list-style-type: none"> Increased revenue 	Continue with our efforts to reduce methane emissions (see page 17).
Energy Source	Use of lower-emission sources of energy and new technologies	Short- and medium-term	<ul style="list-style-type: none"> Reduced exposure to GHG emissions and therefore less sensitivity to changes in cost of carbon Increased capital availability (as more investors favor lower-emissions producers) Reputational benefits resulting in increased demand for goods 	<p>Fulfill our commitments to the Environmental Partnership, as well as identify electrification, renewables (like solar and hydrogen) and infrastructure opportunities throughout our operations, as discussed in Improving Our Emissions Performance (see page 16).</p> <p>Evaluate and implement design concepts for new offshore facilities that improve emissions intensity over the life of the facility, such as the improvements we implemented in the King's Quay floating production system.</p> <p>Continue to evaluate low-carbon energy and CO₂ mitigation opportunities like geothermal and renewable energy sources, as highlighted on page 22.</p>
Products, Services and Markets	<p>Natural gas as lower-emissions fuel.</p> <p>Development of natural gas markets with carbon capture for power generation.</p> <p>Development of natural gas markets with carbon capture for blue hydrogen production.</p> <p>Entering the carbon value chain as a storer in enhanced oil recovery.</p>	Long-term	<ul style="list-style-type: none"> Increased revenue Increased capital availability (as more investors favor lower emissions producers) Reduced exposure to GHG emissions and therefore less sensitivity to changes in cost of carbon 	<p>Use our natural gas assets in Canada as a low-intensity resource.</p> <p>Allocate capital to investments in resources that will remain economically attractive under various transition pathways.</p>

Time horizon definitions: short-term – one to three years; medium-term – four to eight years; long-term – beyond eight years.

Climate Metrics and Targets

We use a range of metrics to assess and manage our climate risks, opportunities and performance, including absolute and intensity metrics for Scope 1 and 2 GHG emissions, Scope 3 GHG emissions, methane, flaring, air quality, water and waste management. We also track and report metrics recommended by SASB for oil and natural gas exploration and production companies (see page 94 for our SASB index) and GRI (see page 100 for our GRI index). For a full list of metrics and data over the preceding five years, see Performance Data section (page 83).

We regularly assess our methane emissions performance against peers and industry leaders. Using this data as input, we are considering an internal methane intensity goal as a precursor to setting a possible future external goal.

Short-Term⁸ Metrics and Targets

In 2021, the Compensation Committee of our Board added an annual Scope 1 and 2 GHG emissions intensity goal as a performance metric in our Company's annual incentive plan. The target metric for 2023 was set to ensure we remain on the path to achieving our medium-term goal of reducing our GHG emissions intensity. The annual incentive plan also includes safety and spill performance metrics. The weighting of these three sustainability metrics in the plan is 20%. We met our 2023 target range for these metrics, as outlined in the [2024 Proxy Statement](#).

We also track our annual spend deployed toward climate-related risks and opportunities. For example, this includes our emissions reduction and water risk management spend, as highlighted in this report (see page 16 and page 33, respectively).

Medium-Term⁸ Metrics and Targets

We have established two external targets to drive our emissions performance: a commitment to eliminate routine flaring by 2030 and a goal to reduce Scope 1 and 2 GHG emissions intensity by 15% to 20% by 2030 from a 2019 baseline. As discussed in [Improving Our Emissions Performance](#) (see page 16), our performance in 2023 puts us on a clear path to achieving our 2030 targets. Our GHG emissions intensity decreased by about 37% from 2019 to 2023. We are also on track to achieve zero routine flaring by 2030.

Long-Term⁸ Metrics and Targets

We also use a set of metrics to measure strategic risks and opportunities from climate change and the related energy transition. These include the emissions measures mentioned above. We view Scope 1 and 2 GHG emissions intensity as an indicator of cost risk in relation to carbon pricing regimes. We view Scope 3 GHG emissions intensity as an indicator of revenue risk in relation to declining oil and natural gas prices that could result from carbon pricing and competition from non-emitting sources of energy. When we test the effects of energy transition scenarios, we look at several metrics to evaluate the resilience of our portfolio. These include the Net Asset Value (NAV) of the portfolio, the impact of internal carbon price, the evolution of corporate debt in the scenarios, and the percentage reduction in reserves under various scenarios. See page 24 for more on our scenario analysis process and results.

External Assurance

We are committed to reducing emissions and progressing toward our emissions intensity goal. To ensure the integrity of our emissions data, for a fourth consecutive year, we have engaged ERM CVS to conduct an independent limited assurance on our absolute Scope 1 and 2 GHG emissions. For ERM CVS' Independent Assurance Statement, see page 90.

⁸ Time horizon definitions: short-term – one to three years; medium-term – four to eight years; long-term – beyond eight years.



WATER MANAGEMENT

Water is essential to our communities, ecosystems and industry. Murphy is committed to responsible water management practices, stewardship and conservation in all areas where we operate and across the entire operations, from the Board, Chief Executive Officer and other senior management to field personnel. We strive to be a leader in water management planning and practices, with the ultimate objective of increasing produced water recycling while reducing the withdrawal and use of fresh water in our operations.

The availability of fresh water is being affected by human consumption, farming and industry water users, as well as climate shifts. We integrate water scarcity into our regular risk assessments and our business strategies. From the initiation of our onshore operations in 2009 to the end of 2023, Murphy has invested an estimated \$55 million in infrastructure to minimize our dependence on fresh water and maximize our use of recycled produced and flowback water and other alternative sources. In the last six years alone, from 2018 to 2023, this investment was about \$50 million.

Onshore

Water is a key input for our hydraulic fracturing operations and is therefore critical to maintaining our onshore production targets. To help ensure our water use is sustainable, we have a comprehensive water management policy and strategy that addresses planning and forecasting, water sourcing, treatment, storage, recycling, permitting and optimization. In 2023, Murphy did not have any incidents of non-compliance associated with applicable water permits, regulations or standards.

Water Management Policy

Our onshore Water Management Policy outlines our commitment to reduce consumption of fresh water and conduct responsible water management practices. Our policy focuses on:

- Reducing our impact and demand on the local freshwater sources.
- Complying with regulations and standards.
- Protecting the environment and the diversity of plant and animal life while minimizing the impact of our operations.
- Deploying new treatment technologies to our water management process.
- Continually expanding our water infrastructure network.
- Tracking and reporting water metrics to drive transparency, learnings, optimization and future planning.

Water Definitions

We have adopted the following definitions for our internal and external reporting purposes, based on SASB and Ipieca's guidance.

Fresh Water – Defined according to the local statutes and regulations where we operate:

- In Texas, the Railroad Commission's Groundwater Advisory Unit (GAU) defines freshwater zones as generally less than 1,000 mg/L total dissolved solids (TDS); this is also consistent with the US Geological Survey definition.
- In Alberta, the Alberta Energy Regulator (AER) defines fresh water as non-saline water less than or equal to 4,000 mg/L TDS.
- In British Columbia, the British Columbia Energy Regulator (BCER) defines fresh water as non-saline water less than or equal to 4,000 mg/L TDS.

Freshwater sources include surface water (rivers, lakes, streams, surface run-off, etc.) and groundwater.

Alternative Water Sources – Water obtained from sources such as saline groundwater, recycled produced water, municipal effluent and sharing/collaborative opportunities.

Fresh Water Withdrawn – Volume of water drawn from freshwater sources.

Fresh Water Consumed – Volume of fresh water used for our onshore operations. Due to the timing of freshwater withdrawals and consumption, the withdrawal amount may not necessarily equate to the consumed amount in a particular calendar year.

Produced Water – Saline water that is brought to the surface during the production of hydrocarbons, including formation water, injection water and flowback water (initial produced water for a defined period).

Recycled Water – Alternative water that is used in operations after treatment, to reduce freshwater withdrawal.

Water Management Strategy and Risk Management

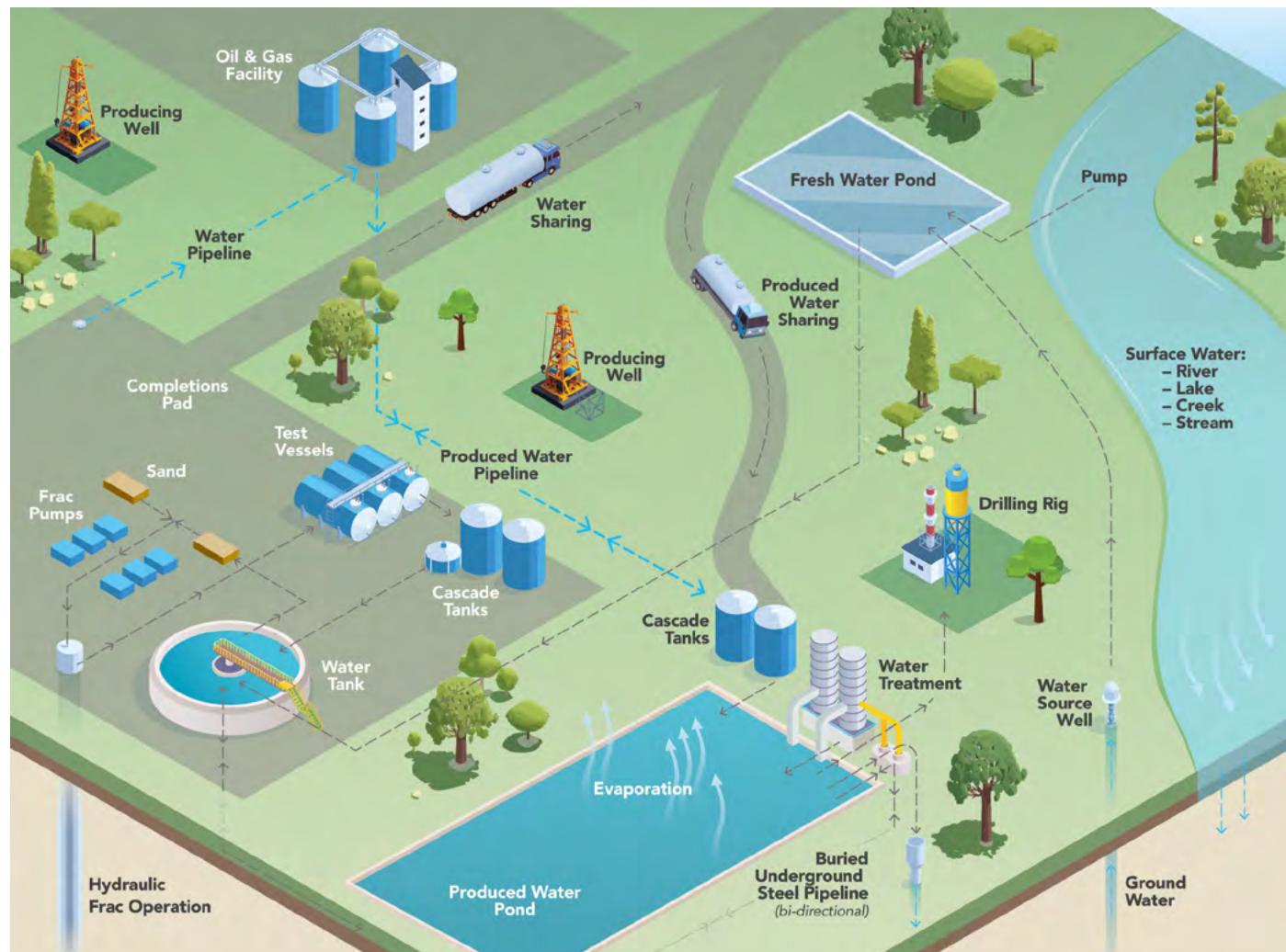
Our water management strategy provides the philosophy and framework for how we identify and manage short-term and long-term needs, develop solutions and optimize our programs. Our Senior Vice President, Engineering and Technology, is responsible for the overall water management for the Company. We undertake comprehensive planning to ensure adequate volumes and quality of source water are available when required, with the goal of maximizing water recycling, improving efficient water use and lowering costs. This planning includes managing, storing, treating and transporting produced water.

When considering water sources for our development projects, we assess opportunities to use fresh and alternative water. We consider a range of factors, including ways to reduce freshwater use, preferences of area stakeholders, regional regulations, water stress and physical characteristics, as well as economic and technical feasibility.

Mitigating risks and potential impacts to water resources is a key component of Murphy's water management strategy. Our Water Management team, led by our Staff Water Management Technologist, works closely with the Operations and the Regulatory teams to integrate water-related risks into our operations risk assessments and business strategy and develop mitigative measures. Water challenges and risks can include:

- Access to alternative water and freshwater sources
- Water treatment options
- Storage and conveyance opportunities
- Water forecasting
- Understanding of development plans, seasonality factors and lead times
- Understanding of flowback and produced water rates
- Disposal options, when required
- For high water stress areas, conduct risk assessments on sourcing accessibility, availability and compatibility

ONSHORE OPERATIONS WATER USE LIFE CYCLE



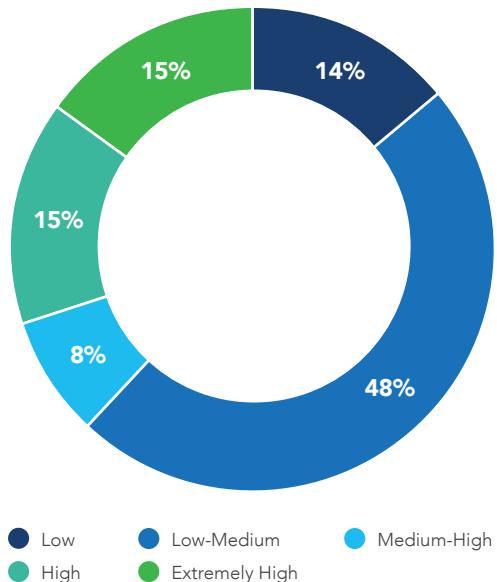
Water Sourcing

Whenever feasible we seek to use alternative, non-freshwater sources, including flowback and produced water, saline groundwater and effluent wastewater. We continue to invest in and expand infrastructure and management capabilities to optimize our use of flowback and produced water, a primary element of our efforts to reduce freshwater use.

To further expand our use of produced water instead of freshwater, we worked with water disposal vendors to develop an agreement for us to use third-party produced water that would otherwise be sent to a disposal well, resulting in reduced need for fresh water. We started accepting produced water from two vendors to pre-fill ponds at year-end 2022, prior to our first quarter 2023 completions activities. These vendors have pipeline connections to our ponds and facilities. As with produced water from our own operations, produced water we receive from these vendors is treated to remove suspended solids and iron prior to pumping it to the pond. We are also in continued discussions with local city districts to use effluent water and have had success with produced water sharing opportunities with other operators in and around our operating areas.

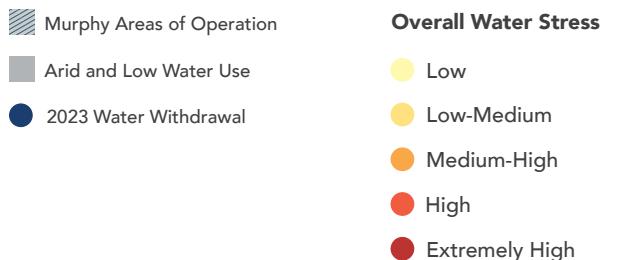
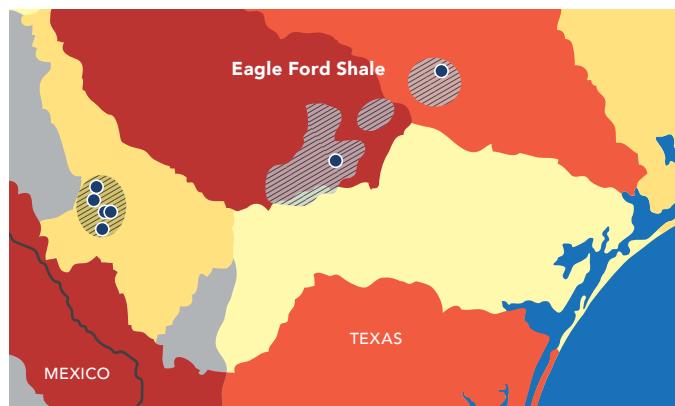
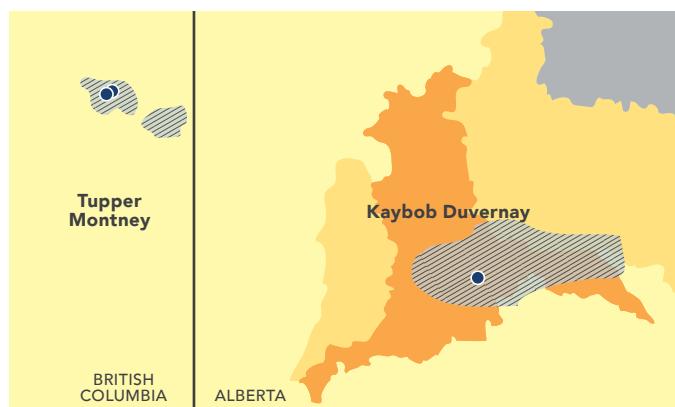
When it is not feasible to use alternative water sources, and freshwater sources are required, we strive to avoid impacts on wetlands, streams, ponds and lakes, waters of the US (WOUS) or US Army Corps of Engineers (USACE) water bodies, as well as areas with higher water scarcity and wildlife biodiversity.

2023 WATER STRESS⁹ ANALYSIS FOR FRESH WATER WITHDRAWALS



We use the World Resource Institute's Aqueduct Water Risk Atlas tool to determine baseline water stress areas to aid in our risk management and decision-making processes. While there are shifts season to season, when considered on an annual basis, in 2023, 30% of our fresh water withdrawn and 33% consumed were from high or extremely high baseline water stress areas, as defined by the Aqueduct Water Risk Atlas. All these areas were in Eagle Ford Shale, Texas. For context, less than 50% of our total corporate producing wells were located in these areas; however, these wells account for less than 10% of total production. This analysis is illustrated in the chart and maps below. We have not experienced water sourcing issues due to our adaptive water management strategy (see next page).

WATER STRESS MAPS¹⁰



⁹ As defined in the World Resource Institute's Aqueduct Water Risk Atlas tool (Aqueduct 4.0).

¹⁰ Source: World Resource Institute's Aqueduct Water Risk Atlas tool (Aqueduct 4.0) and Murphy internal.

Our adaptative water management strategy prioritizes the implementation of alternative water sources to feasibly reduce fresh water consumption in all our operating areas, not only in high water-stressed areas. The strategy utilizes a fit-for-purpose approach for each area. For instance, in 2023, in Eagle Ford Shale, to reduce our reliance on freshwater for our hydraulic fracturing operations, we purchased and treated waste water from two disposal companies. We also constructed two produced water ponds to responsibly recycle as much water as practicable. Consequently, in 2023, 72% of our total recycled water was consumed in Eagle Ford Shale and 47% of the total recycled water in high or extremely high risk water-stressed areas.

Before any fresh water can be withdrawn and used for our operations, including when we may be near or within critical habitat or high biodiversity value areas, we secure the appropriate approval from the local regulatory or governmental agency. We work with trained natural resource specialists to conduct environmental site assessments, including assessing the volume and timing of water flow required for proper functioning of the local aquatic ecosystem, when it is required for water permit applications. We also conduct other precautionary measures as required, such as adhering to riparian habitat and wildlife setbacks and timelines.

Water Management Networks

Water management networks allow us to strategically withdraw and impound water volumes necessary to support operational activities. These networks include ponds (for both freshwater and produced water), pipelines and facilities such as tanks and filters.

In the **Eagle Ford Shale**, we have a hybrid reservoir infrastructure network, with more than 40 fresh/produced water reservoirs, that allows us to store water in preparation for future operations, and serves to capture water from frac flowback and production operations once wells are online. We also have an above-ground pipeline system and access to groundwater wells and surface water in our key areas of operation. In 2023, we continued to invest capital to optimize our facilities and construct two produced water ponds, allowing us to store – and ultimately reuse – larger volumes of produced water rather than trucking the water for disposal. Subject to operational needs, Murphy plans to construct a new pond annually to increase the recycled volumes, reduce dependence on fresh water, and save costs.

In the **Tupper Montney**, we operate two discrete water infrastructure networks, a 472,000 BBL produced water pond and a 1.25 MMBBL freshwater pond. Approximately 59 miles of water pipeline supports the produced water reservoir by allowing direct displacement, storage and withdrawal without the need for trucking or third-party disposal. This infrastructure reduces our demand on local freshwater sources and substantially reduces the number of trucks needed to support day-to-day operations. Pending the appropriate approvals, we plan to construct and commission a second produced water pond. By doing so, our produced water network will then allow us to capture up to 100% of the water from frac flowback and production operations for storage and recycling (see case study on right).

In the **Kaybob Duvernay**, a remote area posing unique logistical and regulatory challenges, Murphy invested in a 22-mile freshwater pipeline and reservoir infrastructure in 2019 and 2020. The goal of this infrastructure is to reduce trucking activities and environmental disturbances across the Kaybob East and Two Creeks fields and enable us to strategically withdraw fresh water during high-flow periods for impoundment, staging and future use during low-flow periods. The reservoirs also allow us to operate and impound groundwater when local surface water sources are not available. We have been actively working with our peers and neighboring operators to share water infrastructure when practical.

DON'T SETTLE FOR "GOOD ENOUGH"

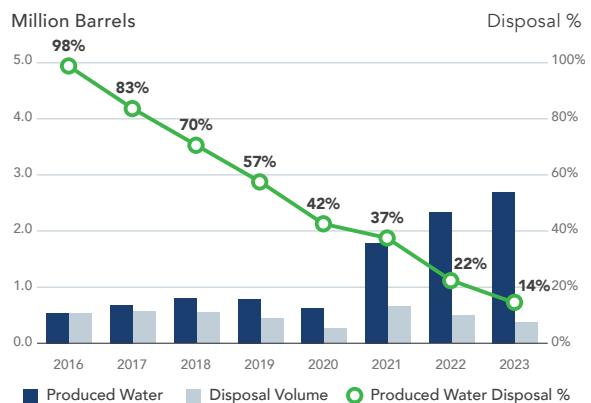
Increasing Tupper Montney Produced Water Storage Capacity

Since installing our 472,000 BBL produced water pond and associated pipeline gathering network at Tupper Montney in 2019, we have exceeded our water reuse expectations. In total, this infrastructure has supported 49 well completions with 4.5 MMBBL of recycled produced water, eliminating the need to dispose of that water (see chart below). This amount of recycled produced water has also directly offset freshwater volumes we would otherwise have needed to source from the local environment.

Leveraging this success and pending the appropriate approvals, Murphy plans to construct and commission a second complementary 472,000 BBL produced water storage facility adjacent to the first pond. When it becomes operational, this second pond will further increase the recycling rate across future completions programs and reduce disposal costs for the Tupper Montney asset.

Installing this produced water storage capacity is a testament to our commitment to freshwater conservation and responsible water management practices.

TUPPER MONTNEY WATER PRODUCTION AND DISPOSAL VOLUMES





Produced water pond and facility in Tupper Montney.

Predicting High-Flow Periods in Canada

In Kaybob Duvernay, Alberta, and Tupper Montney, British Columbia, we withdraw and impound water volumes for operations during water-rich or high-water flow during spring, when streams rise and have higher flow rates as a result of snowmelt. Withdrawing the fresh water required during the high-flow periods reduces the chance of negatively affecting the environmental flow needs of downstream aquatic ecosystems, maintains available free water allocation for other local area water users and decreases the need to withdraw water at times of stress or drought where access to water may be restricted.

Murphy actively monitors our freshwater sources with automated lake hydrometric stations and river monitoring aids, both of which help us predict the high-flow periods for long- and short-term forecasting. Fluctuations in moisture levels year over year, and the potential impacts of climate change on water resources, make it increasingly necessary to understand the impact on freshwater availability.

Automated lake hydrometric stations record water level, oxygen saturation and water temperature. These stations are monitored electronically, which ensures data integrity and makes data analysis more efficient.

Additionally, rivers and streams are monitored by a third party to assess fish habitat, fish-screen sizing and placement, and river flow conditions. They also monitor flow rates weekly to bi-weekly while withdrawing, to ensure compliance.

In the future, we expect to expand the scope of the program to include local and regional precipitation and snowpack, which will provide data trends to predict possible drought or high moisture levels.

Onshore Water Management App to Support Water Operations

We continue to evolve and enhance the water management software application that we first developed for our Tupper Montney asset in 2019. Today, the app supports our entire onshore water operations in the US and Canada with real-time monitoring, reporting and alerts. Features include:

- Tracking of produced water levels to detect potential leaks and volumes
- Tracking of daily and monthly water pond volume, composition and inspections
- The ability to perform data analytics
- Calculating the ratio of produced water to f reshwater consumption for each well
- Providing an auditable data trail and automated reporting

With better data reporting, analysis and sharing capabilities, we have realized the following benefits:

- Early detection of potential leaks from produced water ponds
- Quicker, easier integration of water management considerations into operational decisions
- Improved planning and forecasting, leading to cost reductions
- Increased produced water recycling and lowered disposal
- Enhanced reporting capability

Water Consumption

We prioritize using non-fresh water when feasible. However, at some of Murphy's locations, storage and conveyance restrictions limit our ability to reuse flowback and produced water. Similarly, consuming alternative water types can be dependent on achievable treatment quality, water compatibility, local regulations, geography, hydraulic fracturing activity levels, scheduling and partner water sharing arrangements, all of which necessitate a unique approach to water management within each of our different operating areas.

In 2023, we completed a total of 49 wells, 34 in Eagle Ford Shale, 15 in Tupper Montney and no completions activity in Kaybob Duvernay. The percentage of recycled water to total water consumed in our operations dropped from 27% in 2022 to 20% in 2023. However, the overall recycled water volume used increased in 2023, chiefly because we completed longer lateral wells that required more total water.

The flowback and produced water generated that was recycled was 31% in 2023, compared to 14% in 2022. When including produced water shared with nearby operators, we recycled 38% of the total flowback and produced water. We have also improved our total water use efficiency. Year-on-year, we have continued to lower our average water use per stage across our North America operations, while maintaining or improving well performance.

We continue to explore opportunities to increase our recycling ratio. For example, our internally developed water management software application enables us to monitor, analyze and forecast our water needs (see page 37).

In the **Eagle Ford Shale**, over the last several years, we have increased our capital investment to improve water recycling rates. Consequently, the percentage of water we sourced from recycled water increased to 17% in 2023 from 11% in 2021. In 2023, we also shared a total of 842,000 BBLs of produced water with nearby operators, and we plan to continue this responsible water recycling practice in the future. Our use of surface water decreased from the prior year because our operations were in areas with little to no surface water, thus requiring increased use of groundwater.

In **Tupper Montney**, after a record high for recycled water volumes and reductions in freshwater intensity in 2022, the percentage of recycled water to total water consumed dropped to 35% in 2023, from 71% in 2022. This was chiefly due to the increased lead time for application approvals for produced water conveyance, and we have reviewed and incorporated lessons learned from 2023.

In **Kaybob Duvernay**, we are in the early stages of field development. In addition to the infrastructure discussed in the Water Management Networks section (see page 36), we are working with nearby operators in the area to share freshwater ponds and pipeline infrastructure. These arrangements benefit both parties by lowering costs and providing reliable access to fresh water, while also significantly reducing the potential environmental impacts of multiple infrastructure developments. We plan to continue to work with multiple operators in the area in the future.

THINK BEYOND POSSIBLE

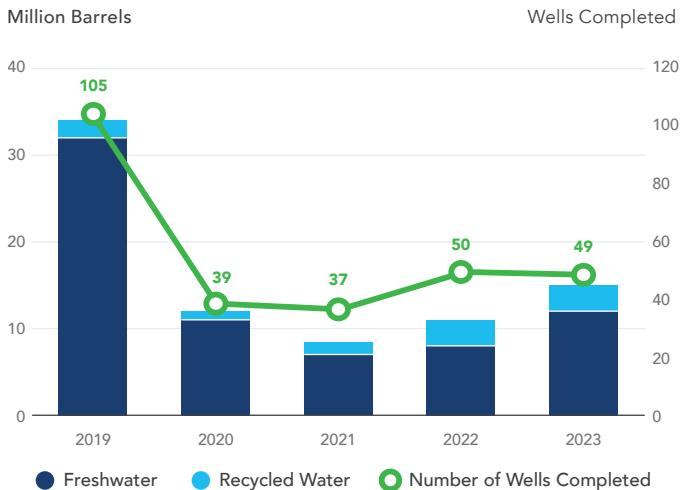
Friction Reducer Optimization Study: Achieving Similar Operational Efficiencies as Fresh Water With Produced Water

One key challenge in our efforts to use recycled produced water has historically been achieving the desired water chemistry for operation efficiency. As produced water is recycled, it becomes progressively more difficult to pump and maintain compatibility with frac fluid additives. The number of total dissolved solids increases, introducing more pumping friction, subsequently creating challenges in achieving the designed pumping rates, especially at the toe, or the very end, of the well. This can result in longer completions timelines that correspondingly increase the cost of operations and delay oil and natural gas production.

In 2023, we conducted a lab study in cooperation with a specialist and hydraulic fracturing provider, studying a friction reducer polymer to assess friction reducer effectiveness in varying compositions of produced water. The goal of this study was to reduce the friction pressures of produced water, subsequently allowing an operator to reach higher pump rates when using produced water. This, in turn, allows us to achieve the desired fracturing rates to properly stimulate the reservoir and optimize production results. Through the study, we have identified effective friction reducer formulations for varying compositions of recycled water, which led to significant improvements in our flow characteristics, while decreasing total pump time per well.

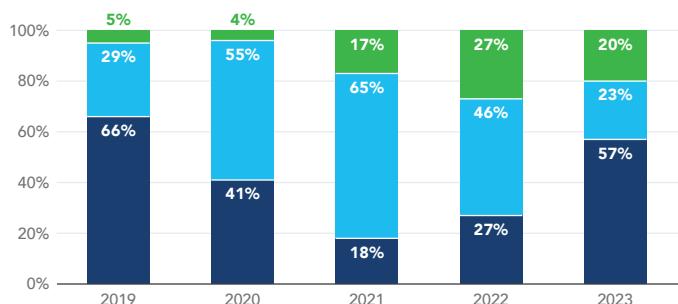
Starting in 2023, the study findings were incorporated into our field operations in Eagle Ford Shale and Tupper Montney. This study enabled us to achieve similar operational outcomes using produced water as fresh water.

ONSHORE WATER USE

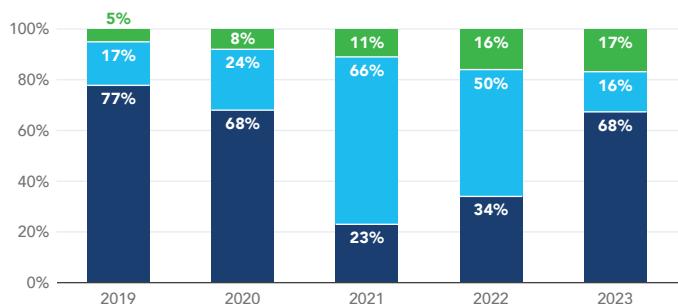


WATER USE BALANCE

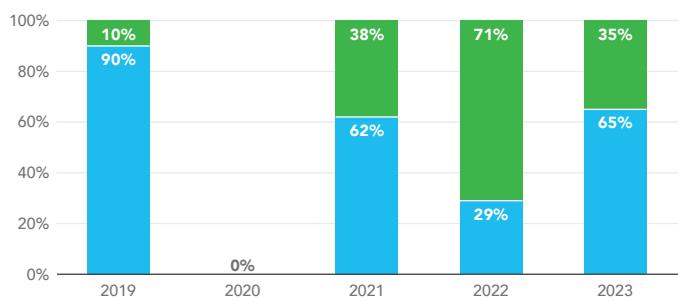
Total Onshore



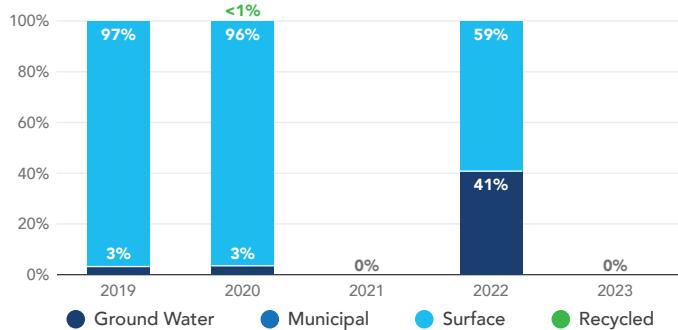
Eagle Ford Shale



Tupper Montney



Kaybob Duvernay



EMBRACE NEW OPPORTUNITIES

Using Recycled Water Beyond Completions Operations at Tupper Montney

In 2023, we continued to pilot recycling produced water as a viable base drilling fluid, replacing calcium chloride brine, for the Tupper Montney drilling operations. This has proven to be a success, with 100% of the brine being displaced with produced water. Produced water has similar properties to brine, but by using produced water, we have increased produced water recycling and lowered costs associated with purchasing and transporting brine, as well as any associated disposal costs.

Following the success of the pilot, we continued implementing produced water as the base fluid in drilling operations in Tupper West and Tupper Main in 2024. We also collaborated with our drilling fluid service provider to further increase the technical properties of the produced water, by piloting a viscosifying additive that can improve rheology, increase maximum density and enhance lubricity. We plan to implement this approach in future drilling operations as standard procedure, where possible.

Groundwater Quality

Rigorous protection of groundwater quality is an important element of our approach to water management. Murphy monitors groundwater in and around our Tupper Montney saline pond in accordance with regulatory requirements. We have installed groundwater monitoring wells around the perimeter of the pond and take water samples quarterly. The water is analyzed against the baseline samples to ensure there have been no changes in the quality of the groundwater.

Though it is not a regulatory requirement to actively monitor groundwater quality in connection with hydraulic fracturing, we proactively sample landowners' groundwater wells prior to completions if the water wells are within proximity to the pad being completed. These baseline samples prior to completions are sent for analysis and stored for future reference and analysis.

Offshore

Our Gulf of Mexico business does not use fresh water but instead primarily uses seawater for oil and natural gas production. Water is used for functions typical to marine environments, including ballast systems, machinery, process cooling and potable water generation. Seawater used for the process is treated using metal ions (copper/aluminum) to preserve facility piping and equipment. De-ionized water is used for closed-loop heating circuits, to minimize integrity concerns and use of alternative chemicals.

Potable water for hygiene and galley use is generated through reverse osmosis, and returned to the sea. This wastewater is treated by marine sanitation devices or chlorine applications before discharge, with regular testing to ensure it has no impact on aquatic environments and is in compliance with federal regulations.

For all water discharged from Murphy's offshore facilities, we strive to comply with the National Pollutant Discharge Elimination System (NPDES), managed and regulated by the EPA. All produced water discharge tests in 2023 passed the required toxicity and oil and grease concentrations (see chart on right). The increase in produced water discharged in 2023 was primarily due to the increase in production, with the remainder due to field maturation. Consequently, while there was a slight increase in hydrocarbon concentration, such levels are still well below the EPA regulatory limit.

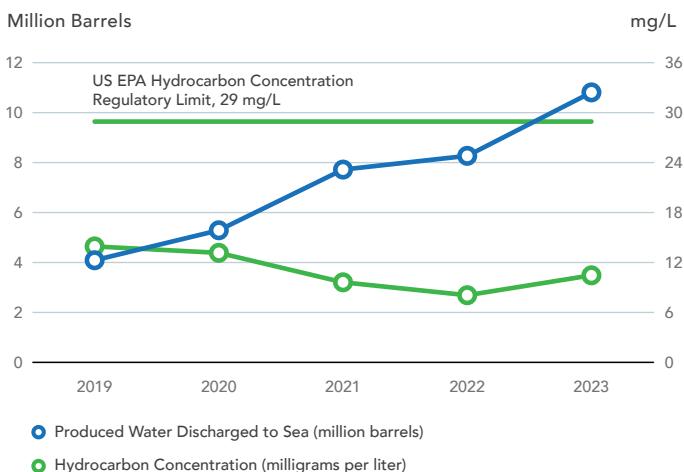
Murphy implemented several initiatives in 2023 related to water treatment and toxicity, including piloting a new scale treatment chemical to reduce the waste associated with water treatment significantly, as well as adopting new chemistries that exclude compounds classified as substances of very high concern (SVHC).

Water-Related Industry and Multistakeholder Collaborations

Murphy belongs to and is an active participant in several stakeholder and industry initiatives that collaborate on mitigating water risks. These groups include the Offshore Operators Committee (OOC) Water Subcommittee, Produced Water Society, Montney Water Operators Group (MWOG), Fox Creek Operators Group (FCOG) Water Management Sub-Committee, Kiskatinaw River Users Group, Ipieca Water Working Group and the South Texas Energy & Economic Roundtable (STEER) Water Committee.

These initiatives provide a forum to allow exploration and production companies to work together on key water issues, including responsible development through water sharing, alternative non-freshwater source research and development, infrastructure sharing and discussions on best operating practices.

OFFSHORE PRODUCED WATER DISCHARGED TO SEA¹¹



¹¹ Hydrocarbon Concentration US EPA regulatory limit is 29 mg/L.

BIODIVERSITY PROTECTION

As stewards of the environment, we seek to understand and mitigate nature-related risks and impacts. We have identified water use as a priority nature-related dependency and actively manage potential risks and impacts. See the Water Management section (page 33) for a detailed discussion on our freshwater dependencies, and risk assessment and management.

We also work to minimize our impacts on biodiversity and local ecosystems. We are committed to protecting biodiversity and avoiding nature loss at various stages of project lifecycles. From planning through execution and on to project decommissioning, all teams collaborate to minimize project footprint and impacts to local biodiversity.

Our operations are in areas with very stringent biodiversity regulations, and we comply with applicable biodiversity laws and regulations. We refrain from operating in protected areas such as those designated by the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage, and the Ramsar Convention on Wetlands and areas designated as endangered species habitat by the US Fish and Wildlife Service.

Less than 1% of our proved reserves are in or near sites with protected conservation status or endangered species habitat, based on the SASB definition. In these High Conservation Value areas where we operate, we follow applicable local, state and federal conservation rules and regulations.

Our HSE department is responsible for the oversight and management of biodiversity and site impact assessments for both our offshore and onshore operations. As relevant to their work, employees are trained on environmental and nature-related protection, including biodiversity, cultural and heritage sensitivities as defined by the International Union for the Conservation of Nature (IUCN) and other international conservation groups.

Lifecycle Approach to Biodiversity Protection

Our overall approach to biodiversity protection and nature loss avoidance – which is aligned with the mitigation hierarchy – is summarized below:

- **Avoid** – In pre-operations assessments, we evaluate potential impacts and avoid impacts to the extent practicable.
- **Minimize** – When impacts cannot be avoided, we design our activities to minimize nature-related risk and avoid nature loss.
- **Restore** – We work diligently to remediate an area so that it can be brought back to its original condition as reasonably as practical.
- **Collaborate** – When possible, we consider impacts outside Murphy operations by peer and nearby operators and jointly plan actions with those operators to reduce areas of impact.

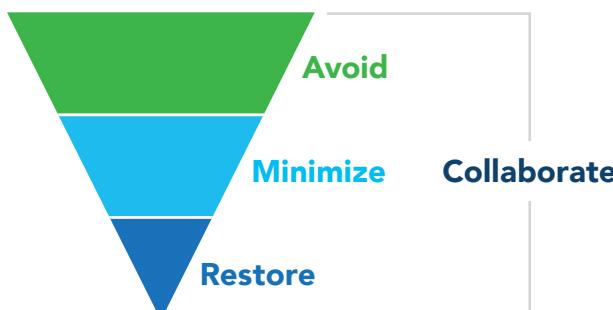
A more detailed description of our approach at various stages of operations is outlined below.

Pre-Operations Assessments and Mitigation Planning

- Internal review of targeted surface disturbance, which includes consideration of potential cumulative impacts outside our operations, including peer operators' impacts, helps to determine whether collaboration is possible to reduce the impacts to the area.
- Pre-disturbance biodiversity analyses are conducted by experts from multiple disciplines, to ensure potential environmental, ecological and archaeological impacts are assessed and addressed.
- Project areas are demarcated in mapping databases for use by industry. Mapped project areas are cross-referenced against public databases of biodiversity and cultural information to create a Regulatory Site Assessment (RSA), which determines if any state, provincial or federal government-established areas of High Conservation Value of concern exist in the proposed project area.
- Once this public information is processed, an Environmental Site Assessment (ESA) is drafted by conducting an on-site inspection to verify the public data and determine if there are any other concerns related to ecology, environmental geology, hydrology and urban impacts not provided in the public data.
- The RSA and ESA identify areas of concern and include a mitigation plan to avoid, minimize or mitigate impacts. Mitigation plans may include environmental monitoring devices, sharing the use of existing third-party owned infrastructure instead of impacting the surface by building new infrastructure, extending project timelines to account for migratory species, and relocating projects when mitigation efforts are not possible.
- For offshore operations, the HSE Regulatory team identifies critical habitats, known as Marine Protected Areas, and includes them on the no-activity zone watch list. In addition to the Marine Protected Areas, planned oil and natural gas projects undertake extensive Archaeological and Geohazard (A&G) assessments prior to the design and installation of any subsea equipment and facilities for oil and natural gas development. These assessments are used to plan infrastructure layouts, to avoid any sensitive areas identified.

OUR MITIGATION HIERARCHY

In Order of Preference



Operations

- Prior to the construction of a project, locations are screened for wildlife presence. If wildlife is detected, a local expert is brought to the location to properly identify the wildlife species and indicate the proper nature loss mitigation methods. These methods generally focus on avoidance of the area entirely until nesting, mating or hibernation periods have concluded.
- Once a project footprint has been reviewed and screened for wildlife presence, project construction may commence. We continue to surveil surrounding wildlife from the beginning stages of construction until a project is closed and/or decommissioned, to help keep wildlife disturbance to a minimum, while protecting the safety of field employees.
- While conducting operations, the project footprint is regularly monitored for any impacts that are not intended or outside project scope. Should impacts be identified, the impacts are handled pursuant to site closure procedures rooted in local, state and federal law and regulations.
- Wellpad sites and pipelines are built with containment berms and erosion protection, to contain materials on-site and create a buffer between our operations and contiguous lands.
- If a site becomes saturated by either rain or snowfall, run-off liquids are tested on-site before they are allowed to drain offsite through pre-installed drainage, which is plumbed through the berm, thus avoiding potential contamination from run-off.
- Once construction of a project has been completed, we implement a remediation plan, with the ultimate goal of restoring any land we utilized to its original state to the extent practicable and feasible. This is accomplished by re-seeding any disturbed areas with native grasses for erosion control, using earthwork landscaping to allow for proper drainage and planting vegetation indigenous to the surrounding environment in support of the natural ecosystem. Once remediation has been completed, we continue to monitor the area to help ensure the success of our efforts.
- During operations, all sites are continuously monitored, and footprints reduced to restore land to its original state to the extent practicable. Reclaimed gravel from footprint reductions is reused for new site and/or road maintenance.

Site Closure, Decommissioning and Restoration

- For all projects, we conduct extensive sampling and testing of the soil to establish its condition prior to making any impact. We catalogue the samples for each site and review them upon site closure to help us restore each site to its original condition, as reasonably practical.
- The HSE department, led by its General Manager, Health, Safety and Environmental, manages the closure of each impacted area to ensure our remediation goals are met and that all reporting documentation is properly finalized for governmental purposes and for landowner reporting.

- At the end of every project, the HSE team implements a decommissioning, remediation and restoration standard, which is part of the Murphy HSE Management System (see page 53) and our policies.
- Remediation goals include a commitment to rehabilitate land to minimize negative impacts and maximize benefits, community involvement in closure planning, reporting on closure plan implementation and site rehabilitation, and to implement measures to address or avoid significant environmental or landscape impacts.
- Along with remediation procedures for each impacted site, there is an annual review to ensure sufficient funds are in place to cover closure and rehabilitation for all operational areas.

Our Regulatory, Environment and Surface Land departments maintain a lifecycle management program that includes ongoing development and review of annual site closure and land rehabilitation activities. Depending on the jurisdiction of operation, Murphy executes these activities in accordance with a "timeliness to closure" mandate. This helps to ensure that older, inactive assets are managed within a reasonable timeframe, or in accordance with an "inventory reduction program" that necessitates adherence to regulated annual closure spend targets based on our proportion of the immediate jurisdiction's total oil and natural gas calculated liability. We also consider seasonality and stakeholder timing requirements and preferences and time certain elements of our closure and rehabilitation work to reduce seasonal impacts and to operate between the phases of crop management. Through an at minimum bi-annual priority risk-ranking exercise, specific closure and rehabilitation activities are chosen, based on one or more of the following:

- Regulatory and stakeholder drivers
- Seasonality constraints
- Limited cost/scope needed to achieve closure
- Legacy liability age
- Technical review stage
- Known or suspected impacts
- Batch investigative work, limited site knowledge available
- Required additional assessment work

Part of our lifecycle management program is monitoring the rate of closure activities with respect to spending and pace of inactive liability growth. For instance, in Canada, our HSE personnel work collaboratively with our Operations teams to assess if, instead of being decommissioned, older inactive assets could be brought back online to create extra value for the Company and/or be used as potential surface locations for future multi-wellpad drilling, thus reducing the need for future surface disturbance. Since this approach has been successfully applied in Canada, we are reviewing whether a similar approach can be applied to our Eagle Ford Shale operations to minimize future land use and impacts.

In our offshore business, we manage the decommissioning of wells and associated subsea infrastructure to minimize disruption to ocean biodiversity and ensure adherence to applicable federal laws and regulations. For example, in 2023, Murphy permanently abandoned three deepwater subsea wells in accordance with applicable laws and regulations. We sought to ensure downhole isolation of hydrocarbon and sulfur zones, protection of any freshwater aquifers, and to prevent migration of formation fluids within the wellbore or to the seafloor. All wells were sealed and cemented to protect against the risk of potential future leaks.

Proactive Community Engagement on Biodiversity and Site Impacts

We involve the surrounding community in our biodiversity assessments, mitigation planning and site closure process. For example, in British Columbia, we notify landowners, local Indigenous communities, municipalities and regional districts of all closure plans. Additionally, we abide by government consultation requirements with Indigenous communities when seeking permit approvals in British Columbia and Alberta. When local issues arise, we seek a resolution that weaves community concerns into Murphy's Project Reclamation and Closure Strategy. Community concerns, along with updated government mandates, are an important guide to our physical site remediation and reclamation processes.

We provide a variety of channels for stakeholders to engage with us regarding concerns of biodiversity protection. For example, in Canada, external stakeholder engagement is a required component of permit issuance for all well sites, pipelines and any other facilities. Soils, archaeological, wildlife and vegetation studies are also required as part of the RSA and ESA process. When permit applications are filed, contact information for any stakeholder concerns are provided in the public notification letter. In the US, even though external stakeholder engagement is not always required, Murphy routinely involves its surface stakeholders in the development process, to ensure surface land concerns are fairly balanced against ongoing production and development operations.



Murphy does not conduct operations within 500 meters of any known or identified Trumpeter Swan-inhabited water bodies in Canada.

Biodiversity Concern Reporting

Murphy stakeholders can raise biodiversity concerns or grievances using the following methods:

- **By Phone or website** – We have a dedicated center to process and document any concerns or comments raised by phone or via the website. The call center refers comments to the Land department, which is responsible for recording, referring, monitoring and ultimately resolving all queries.
- **Surface Land** – All Murphy landowners are provided with a surface Land representative whom they can call to discuss any potential issues.

MAKE IT BETTER

Protecting Local Wildlife at Our Produced Water Storage Facilities in Canada

The protection of regional and migratory/transient wildlife is important to Murphy across our entire operations. One such example is at our Tupper West asset in Canada, where we have constructed large-volume produced water storage facilities. These facilities enable us to recycle the produced water for our operations and consequently, significantly reduce our freshwater needs. We have implemented a range of wildlife-deterrance mechanisms in the design of the facilities to keep wildlife away from and out of the stored water. Protective measures include the installation of:

- 8-foot page-wire perimeter exclusion fence for large game/wildlife
- 2-foot "chicken-wire" perimeter exclusion fence for small game/wildlife
- Above-fluid reflective disk system strung at even intervals
- Predator effigies
- Wildlife auditory distress-call system
- Avian-specific laser deterrent system

The avian-specific laser deterrent system leverages the natural fight or flight instinct in birds and compels in-flight movement to another more favorable perceived fresh water source/landing rest area. Corollary benefits include discouraging long-term avian habituation in the area, cost effectiveness and employee safety. Since the installation of the avian-specific laser deterrent system, Murphy has not had any negative avian encounters at our produced water storage facilities.

SPILLS MANAGEMENT

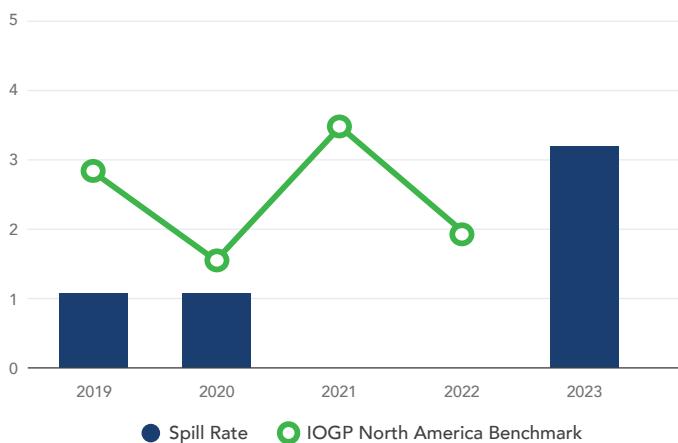
Managing spill risk is a critical element in reducing our environmental impact. Procedures to minimize such incidents are covered by our HSE Policy and HSE Management System (see page 53), and Asset Integrity Management (see below).

Murphy tracks its environmental releases throughout the year and evaluates the data for preventative measures and continual improvement. Historically, internal targets were set based on the number of spill events in any year, utilizing the IOGP calculation of hydrocarbon spill events of more than 1 BBL outside secondary containment.

In 2019, we modified the spill metric target used in our AIP to focus on our overall hydrocarbon spill volumes rather than just the number of events. Based upon a review of peer data, we set our target to drive for favorable performance relative to the industry as a whole. We have performed better than the IOGP North America benchmark from 2019 to 2022. For the past three years, we have met our AIP target range.

IOGP SPILL RATE AND PEER BENCHMARK

Barrels Oil Spilled per Million BOEs Produced



MEETING AIP TARGET RANGE IOGP SPILL RATE METRIC

2021



2022



2023



In 2023, after 37 consecutive months of being spill free, we experienced four oil spills greater than 1 BBL outside of secondary containment in our US onshore assets. We identified the sources of the spills and performed the necessary actions to isolate, contain and remediate in accordance with applicable laws. We are in the process of assessing lessons learned and possible improvement opportunities to our maintenance and inspection programs.

Notably, Murphy has not had an offshore spill in the deepwater Gulf of Mexico greater than 1 BBL since 2003. We remain vigilant to minimize risk across our operations.

ASSET INTEGRITY AND PROCESS SAFETY

Asset integrity and process safety are central elements of our HSE Management System (see page 53). Our Global Asset Integrity and Reliability team continues to focus its priorities to de-risk our assets through implementation of our detailed Asset Integrity Management Programs.

Asset Integrity

Asset integrity is an engineering discipline managed within the Global Engineering department, which is headed by the General Manager of Engineering. The team is structured as an international team providing global operational support for our integrity management programs. We plan for and evaluate the integrity of our assets throughout the life cycle, from design, construction and operations to abandonment. Personnel who are certified to international standards such as the API 510 – Pressure Vessel Inspector, API 570 – Piping Inspector and National Board Pressure Equipment Inspectors, help execute our programs and perform field inspections. Data from these inspections is also analyzed by integrity engineers.

The Global Integrity Management Program details general requirements for all assets. Specific requirements for each asset are defined and captured to ensure the management and review of pressure equipment, pressure piping, pipelines, and structural and subsea integrity. In many cases, our requirements exceed regulatory requirements. The effectiveness of our approach is illustrated by the results of third-party and regulatory audits of our programs. Regulatory audits in Canada have received grades consistently above 90% on our asset integrity management programs since 2018. Our US onshore assets were also audited in 2022 through the Texas Railroad Commission Pipeline Safety Division under PIPES Act Section 114, where Murphy passed without any additional follow-up or oversight activities being required. This audit is conducted at least once every five years.

We emphasize risk-based inspections and an anomaly management approach, to optimize resource deployment. We implement digital information systems to improve awareness of risk and the evaluation of inspection and anomaly data across our operations. Through these assessments, we identify areas of higher risk and run targeted projects to mitigate risks. These projects include construction activities as well as improved maintenance programs, such as optimized pigging programs, in-line inspections (ILIs), pipeline Right-of-Way (ROW) inspections, verification digs, coating programs, chemical programs, cathodic protection surveys and coupon programs.

Enhanced ILIs Lead to Fewer Environmental and Safety Incidents

In the last six years, we have enhanced ILIs of our North America onshore pipeline systems. We use the results from these ILIs to support continuous improvement of our integrity programs, with the aim of responding more effectively to the dynamic nature of our operations. By year-end 2024, we plan to complete baseline ILIs for 90% of our total North America pipeline producing systems onshore. Locations are determined through risk assessment, and priority is given to those with higher risk.

In the offshore business unit, we have a structured risk and condition-based integrity program covering inspection, monitoring and anomaly management strategy for five main safety critical systems that has yielded effective results. For example, in 2023, one of our facilities integrity programs tagged and proactively corrected 955 corrosion anomalies, ranging from spool replacement to coating management, to prevent potential loss of containment and unplanned shut-in through our asset integrity program. In the past two years, we have closed out 2,127 anomalies.

We regularly monitor asset integrity factors for other equipment – including pressure piping, pressure equipment, offshore handrails, grating, riser and structural integrity – through visual assessments, thickness measurement programs and anomaly repair strategies. We monitor approximately 120,000 condition monitoring locations for approximately 2,200 pressure vessels and their associated piping across all assets. Inspection data is uploaded into a database that is reviewed regularly with operations, maintenance, reliability and facilities engineers, to support continuous improvement of our integrity programs.

In addition to conducting inspections on defined schedules, we also evaluate our systems for abnormal conditions in real time. The Remote Operations Center (ROC) continuously monitors our operations, including pipelines, pressure vessels, tanks, etc., for changes in pressure, level, flow shutdowns or alarms, and is able to dispatch operations personnel to intervene when necessary. In 2022, we introduced a new risk ranking to onshore wellpads, through which they are evaluated and risk ranked based on safety, integrity and operational criticality. Equipment, pipelines and wellpads with a higher risk rank and criticality are prioritized for ongoing maintenance, operator checks and inspections. When necessary, components are proactively replaced to

avoid failure and loss of primary containment. This risk-ranked wellpad list is regularly updated according to physical changes in production, environment or inspection findings, to name a few.

Utilizing Technology to Drive Efficiencies and Reduce Personnel Risk

We continue to implement innovative technology solutions to improve the efficiency of our asset integrity program, helping us reduce risk and optimize resources. For example, over the past few years, we have improved our ability to capture and analyze data from field inspections within our Integrity management software and improved integration with other systems. We also implemented “digital twins” offshore to manage risks effectively and efficiently. In 2023, we used drones for our In-Service Inspection Plans (ISIP) annual survey for all four of our operated floating production systems in the Gulf of Mexico. Further, we initiated a pilot project to evaluate system integrity using artificial intelligence algorithms, and we are assessing its effectiveness.

Process Safety

In 2018, we kicked off a multidisciplinary effort to create a focused and structured approach for process safety event tracking and overall improvement, through defined key performance indicators. This effort, which is modeled on the best-practice-based API RP 754, includes working to better understand and mitigate risks in our operations across all assets. Process safety is now part of the Asset Integrity team of engineers, where a dedicated engineer is running the process safety program for each asset.

Process safety events (PSE) are tracked and ranked by severity, following guidance from API RP 754. Tier 1 through Tier 3 events are categorized as lagging indicators, which we log in our incident management database. We also track near-misses (Tier 4 events) as a leading indicator, which are summarized in data dashboards. All PSE Tier 1 and Tier 2 events are investigated for root cause, and we implement corrective actions to avoid repeat incidents. When multiple low-consequence and PSE Tier 3 events occur, we may perform root-cause analysis to identify potential underlying systemic issues that could result in higher-severity incidents. The data collected from these process safety efforts are reviewed in HSE Steering Committee meetings with senior management, as well as in field-level safety meetings.

A key pillar of our process safety approach is working to ensure that we understand the hazards and risks in our business, so we can avoid them. For this reason, we conduct Hazard Analysis Revalidations (HA-Rs) of our assets to capture any changes that may have occurred, and we audit ourselves to ensure nothing was missed. In our offshore operated facilities, HA-Rs are carried out on a five-year cycle. HA-Rs are conducted to comply with BSEE and the Center for Offshore Safety’s Safety and Environmental Management Systems (SEMS) standards per 30 CFR 250 Subpart S and API RP 75, with a focus on personnel safety, environmental protection and process impact.

The number of Tier 1 events decreased from 2022 to 2023, with the PSE Tier 1 rate having improved over the last five years.

Process Safety Events (PSE)	2019	2020	2021	2022	2023
PSE Tier 1 ¹² Count	5	3	5	5	2
PSE Tier 1 ¹² Rate, per 200,000 work hours	0.10	0.12	0.20	0.14	0.06

Subsea Leak Detection

The subsea leak detection (SSLD) program began in 2018 as part of our “Think Leak First” philosophy, designed to empower our staff to “Own It” and use stop-work or stop-production authority where required. All subsea assets are reviewed on a case-by-case basis, and the appropriate leak detection methodology was implemented and put into operation. Leak detection methodologies implemented include visual surveillance, flowline hydrostatic monitoring, rate of change, conditional rate of change and modified mass in mass out. All offshore production operations staff have been trained on SSLD, which is now included as part of our competency program.

Murphy uses a risk assessment methodology to manage the integrity of the subsea system, including risers, flowlines, subsea equipment and subsea export pipelines, for all the operated assets in the Gulf of Mexico.

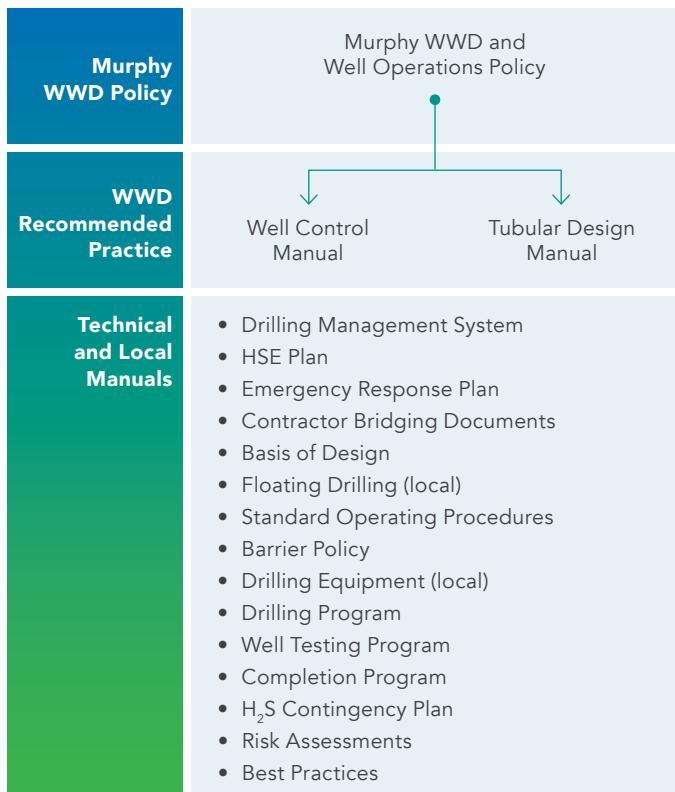
WELL INTEGRITY

Effective well management and well integrity are critical to the safety, environmental and operational performance of our operations. It is the responsibility of every operations employee to maintain well integrity while managing our onshore and offshore wells. It is our goal that our wells are designed, drilled, completed and maintained to high and consistent standards, complying with all relevant laws and regulations, and compatible with balanced economic and environmental needs.

The Murphy Worldwide Drilling (WWD) and Well Operations Policy Manual outlines the relevant policies, standards and practices for design, risk management, installation, testing verification and operational procedure management. This Policy Manual underpins our ability to meet our HSE goals; to remain in compliance with our HSE Management System (see page 53); and to prevent incidents that could have a negative safety, environmental or economic impact. We review it periodically to assess changes and continuous improvement opportunities and have a robust Management of Change process to implement modifications.

Our well integrity guidelines, policies and procedures are aligned with best practices and meet or exceed regulation and industry standards around the world where we operate. This includes the Barrier Policy which outlines the best practices to manage the barrier between the formation and the environment through the life cycle of a well.

WWD AND WELL OPERATIONS POLICY HIERARCHY



Engineering Design

We begin engineering well design long before a well is permitted. Geologists and engineers evaluate formation depths, pore pressures and rock fracture gradients, to site and design wells in ways that will prevent loss of well control and, in the case of onshore wells, ensure the protection of freshwater aquifers.

Key engineering and design best practices that we follow include installing multiple isolation barriers; identifying and mitigating potential drilling hazards; and implementing careful casing design and testing.

Drilling and Completions

As part of the completions process, physical isolation devices are put in place so that activities are executed in a flow-controlled and safe manner. Murphy requires multiple isolation devices, all of which are tested and capable of operating both independently and simultaneously throughout the lifecycle of a well, including blowout preventers (BOPs), wellhead, casing, cement, packers

¹² Per the API RP 754 and IOGP Report 456 definition.

and bridge plugs. While drilling, pressure tests are performed after each casing string is run and cemented, prior to drilling deeper to the next hole section. Before completions, pressure tests are performed to verify integrity of all the casing strings installed. During completion pumping operations, pressures are monitored to inspect potential communication between casing strings and existing offset wells. Additionally, the onshore ROC monitors dashboards for offset frac mitigation while hydraulic fracturing operations are ongoing.

Our engineers participate in quarterly Gulf of Mexico deepwater drilling and completions operators group meetings with other operators, to share lessons learned and best practices for deepwater well operations. Industry lessons learned and best practices are referenced when the Murphy WWD Policy is reviewed, to support continuous improvement. The engineers work with vendors to identify and analyze technological and operational improvement opportunities for application to our assets/projects.

Our vendor selection process includes criteria for environmental and safety performance; we choose to work with contractors that support our sustainability goals whenever possible. We also contract with drilling rig quality assurance audit companies, whose highly skilled consultants create value by advising on HSE risk mitigation and the optimization of rig equipment performance. Their goal is to assist clients in achieving their objectives of working safely with no incidents, accidents or injuries and recognizing issues that will reduce nonproductive time, while lowering overall cost.

Production Operations

All well performance data is centrally stored in a drilling and well operations data management software program, to maintain all operational and downhole well records. Once an onshore well is brought online, its parameters, such as flow and pressures, can be monitored remotely 24/7 in our ROC.

We continuously monitor offshore wells to ensure all wellbore parameters stay within engineered wellbore design limits. We adhere to all prescribed regulatory testing, which includes surface-controlled subsurface safety valves, underwater safety valves and boarding shut-down valves. All of these regulated tests are verified by relevant government organizations.

Well Abandonment

Murphy performs well abandonments according to applicable laws and regulations. We seek to ensure downhole isolation of hydrocarbon and sulfur zones, protection of any freshwater aquifers, and to prevent migration of formation fluids within the wellbore or to the seafloor.

A significant effort in our onshore business is the review of reusing or expanding old pad sites in order to place new future wells; see the Biodiversity section for Site Closure, Decommissioning and Restoration (page 42).

Murphy undergoes yearly reviews of lease statuses and land maintenance requirements. We include funding each year in our Long Range Plan and budget to reclaim certain pad and

road sites when applicable. During the civil construction building phase of pads and the reclamation process, we use biodegradable materials so that over time, the natural landscape is maintained, and we use local native soils and vegetation for regrowth, to maintain local biological profile.

We record a liability for asset retirement obligations and also include these obligations in our Long Range Plan.

Industry Collaboration on Well Integrity

We participate in industry efforts to improve well integrity standards. For example, in 2018, Murphy participated in the update of the Well Control/BOP Industry Standard (API Standard 53). Representatives sat on various committees and provided engineering and operational expertise and advice to API and other industry associations.

We are members of the Center for Offshore Safety (COS), an industry-led initiative to promote continuous safety improvement for offshore drilling, completions and operations through effective leadership, communication, teamwork, disciplined management systems and independent third-party auditing and certification. COS draws on expertise and input from the US oil and natural gas offshore industry and the regulatory community.

CHEMICAL STEWARDSHIP

Onshore

Approximately 99.5% of the frac fluid that Murphy pumps down a well on a typical onshore unconventional hydraulic fracturing job is composed of water and sand, with just 0.5% of other additives.

We do not pump any fracturing fluids downhole that contain diesel, heavy metals like arsenic, cadmium, chromium, lead or mercury, or other harmful ingredients. We do not store additive chemicals on location. Instead, they are delivered and blended in real time on-site as needed, and Safety Data Sheets (SDS) are located at Murphy work sites and available for all personnel. SDS include physical, health and environmental hazards, as well as protective measures for proper handling, storing and transportation of each chemical.

In accordance with US and Canadian regulatory bodies, we utilize and require our pumping service providers to utilize **FracFocus**, a US online chemical disclosure registry, to publicly disclose the chemicals used to hydraulically fracture our unconventional wells, while protecting trade secrets and confidential information.

Offshore

Murphy employs a continuous optimization approach to the chemical program on our offshore facilities in the Gulf of Mexico. We focus on using production- and integrity-related chemicals, to maintain process and utility system integrity, reduce overall usage of chemicals that are discharged with the produced water and reduce risks associated with the transportation and handling of materials, as well as transportation-related emissions.

We require chemical vendors to commit to improvements in sustainability and safety. Murphy is working with our chemical suppliers to be proactive in developing chemistries that avoid use of components that are expected to be or may be classified in future as substances of very high concern (SVHC). Additionally, we continue to work with them on new product development to reduce overall chemical usage. We also conduct regular site and office-based audits of chemical program efficacy and other HSE aspects.

SEISMICITY

Onshore

Induced seismicity refers to earthquakes that are caused by human activity. Although the risk and occurrence are generally low, induced seismicity can be associated with hydraulic fracturing operations and wastewater disposal sites in unconventional oil and natural gas fields.

We actively assess the potential for these risks, monitor for anomalous induced seismicity and mitigate in full compliance with regulatory agency standards. Key regulators with which we collaborate on seismicity include the AER, BCER and the Texas Railroad Commission (Texas RRC). Although the Texas RRC has no induced seismicity regulations for the Eagle Ford Shale, Murphy has voluntarily adopted the TXOGA recommended best practices initiative on induced seismicity.

We have developed a robust Induced Seismicity Protocol to manage induced seismicity and maintain continued safe and responsible operations for the Kaybob Duvernay, where anomalous induced seismicity occurs. The operational procedures documented in the protocol are updated for each pad in the Kaybob Duvernay and applied more regionally in the Tupper Montney and Eagle Ford Shale.

We are also an active participant in industry associations that support knowledge sharing and induced seismicity research. For example, in Texas, Murphy is one of the founding members of the Eagle Ford Induced Seismicity Working Group. We support three-way collaboration among industry, regulatory and academic participants, which furthers the understanding of potential causes and mitigation steps to manage induced seismicity.

Offshore

Murphy undertakes a variety of offshore seismic surveys for identification of shallow drilling hazards, archaeological surveys, pipeline route surveys and hydrocarbon exploration. These surveys are undertaken by specialist contractors, utilizing advanced technology to survey the seafloor and thousands of feet beneath it. Murphy and our contractors adhere to relevant government regulations and industry best practices wherever we operate globally. We also liaise with key stakeholders including fisheries, shipping and marine authorities and recreational vessels, for safe operations and protection of our oceans and critical habitat.

Induced Seismicity Protocol

We follow a three-part Seismicity Risk Assessment as part of our well planning and drilling management approach:

- **Area-Specific** – Risks are calculated based on historical induced seismicity compiled from public and industry sources.
- **Pre-Operations** – Risks are calculated based on 3D seismic data where available and specific geologic conditions encountered while drilling the well.
- **Frac Operations** – Risk levels are continually evaluated and updated in near-real time, based on recorded induced seismicity.

During operations, we continue to address potential seismicity, employing various means, such as:

- **Monitoring Plan** – Seismic monitoring provides 24/7 coverage during frac operations, and allows detection and location of anomalous induced seismicity.
- **Communication Plan** – We have a process in place to manage efficient communication between operations staff and industry, including regulators as required.
- **Completions Mitigation Plan** – This outlines potential adjustments to the completion program, to manage and further reduce or eliminate induced seismicity.

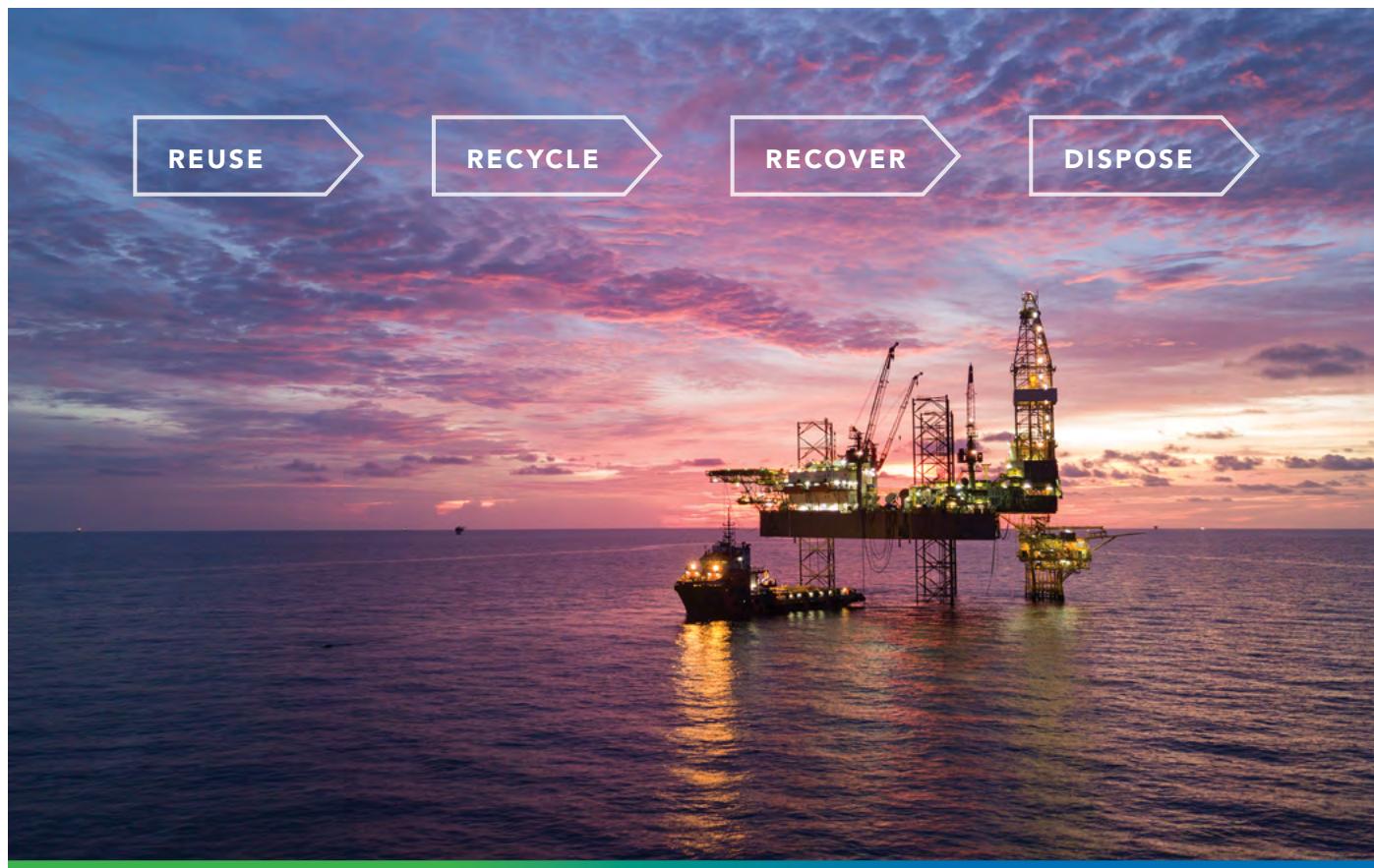


WASTE MANAGEMENT

All waste generated on our sites, including from our drilling, completions and production operations, is managed in accordance with the applicable laws, regulations, industry best practices and local requirements, as well as Murphy's site-specific waste management plans. A core principle of our plans is the waste hierarchy, where we first reuse, then recycle, then recover and finally dispose of waste, where practicable. Waste prevention and reduction are Murphy's preferential options and are deployed whenever feasible. Examples of our onshore and offshore waste management programs are highlighted below.

Oilfield waste management facilities used by Murphy undergo rigorous initial permitting requirements and adhere to continuous maintenance and reporting obligations to maintain their permitting approvals. This includes siting standards of safety, physical design, operations management and record-keeping practices. Murphy maintains an internally approved waste disposal facility list. We pre-screen and periodically audit our preferred facility locations to verify compliance with their permitting approvals under federal, state and local regulations.

OUR WASTE HIERARCHY



Onshore Operations

During the drilling process, Murphy uses a “closed-loop” or “pitless” system, which reduces the overall volume of waste generated and increases the rate of reuse. Waste streams left over from drilling operations are transported to approved oilfield waste management facilities, where they are treated and disposed of following safety and environmental protocols. We manage every load through waste characterization and classification, manifesting and tracking processes.

Offshore Operations

Waste generated from US Gulf of Mexico and international offshore operations is managed in accordance with multiple regulations, including the Clean Water Act (CWA), NPDES and Resource Conservation and Recovery Act (RCRA). For example, operational waste is segregated based on the categorization outlined in the federal RCRA regulations. Depending on the components within this material and the process by which they are generated, we manifest and ship these items for onshore disposal as hazardous or nonhazardous. Necessary decontamination activities are carried out per regulatory requirements.

Food waste from the galley is macerated on the platform or vessel and discharged overboard, in compliance with international regulations under the International Protocol for the Prevention of Pollution from Ships (MARPOL). Black water is treated using a marine sanitation device, which is inspected and certified annually in accordance with US Coast Guard regulations. The concentration of oil in discharged bilge water must meet MARPOL standards, which is achieved by using an oil/water separation system prior to discharge.

Business Waste Management and Recycling Programs

We have waste management and recycling programs at our offices, and onshore and offshore facilities that cover materials such as paper, plastic, glass, scrap metal, plastic water pipelines, used oil, batteries and electronic waste. In 2023, we recycled almost 11,000 pounds of electronic waste. Each office space, kitchen and print room facilities are equipped with recycling bins for paper and plastic.

Also, in 2023, to complement our existing programs and further educate our employees and contractors on single-use plastics recycling, we ran a campaign across our headquarters, field offices and warehouses. Thanks in part to this awareness-raising effort, we collected 670 pounds of plastic, exceeding our goal of 500 pounds. We continue to seek innovative ways to increase our recycling efforts.

Using Digital Innovation to Maximize Environmental and Safety Performance

Murphy utilizes predictive analysis, big data and artificial intelligence as part of a technology-based approach to preventing and managing spills, maintaining assets and improving our safety and emissions performance.

For example, we use enhanced computer models and databases to assist in risk-based asset integrity management, along with scheduling proactive maintenance and repairs when recurrent issues are identified. We also use a collection of mobile-based applications, as well as our onshore ROC, to address real-time situations, including remote shutdowns.

These applications help us to avoid potential incidents and to respond more quickly to out-of-the-ordinary operating parameters. This allows us to automate field task scheduling and to optimize route scheduling by vehicle GPS tracking. The mobile applications also provide remote troubleshooting assistance and just-in-time training for technicians in the field via Augmented Reality (AR) technology. In addition to improving performance and reducing potential environmental incidents, these systems also reduce emissions and safety risks by minimizing the driving time spent manually checking equipment.

3

Protecting Our People

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- 52** HEALTH AND SAFETY OVERSIGHT
 - 53** HEALTH, SAFETY AND ENVIRONMENTAL MANAGEMENT SYSTEM
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Murphy is committed to conducting business in a manner that prioritizes the health, safety and security of all personnel, including employees, contractors and partners, as well as the communities in which we work. We aim to send all our people home safely each day by reducing risk in the workplace.

Our comprehensive **Worldwide Health, Safety and Environmental Policy** and Health, Safety and Environmental (HSE) Management System apply to all Murphy operations worldwide. Murphy's HSE Policy and management system are based on industry best practices and our extensive experience. We strive to achieve top-quartile safety performance as measured against our peers.

HEALTH AND SAFETY OVERSIGHT

In 1993, the Murphy Board established a Health, Safety and Environment Committee to govern the Company's health, safety and environmental activities. Since then, the Committee has expanded its responsibilities to include corporate responsibility matters and was renamed the Health, Safety, Environment and Corporate Responsibility (HSE&CR) Committee. The HSE&CR Committee meets at least twice annually to receive relevant updates and review policies, compliance reports, goals and performance data. In addition, HSE updates are provided at each full Board meeting. Further details on the HSE&CR Committee and corporate oversight of climate change initiatives can be found on page 23 of this report.

Our Chief Executive Officer is responsible for the Company's execution of our HSE Policy. That responsibility is supported by the HSE Executive Management Advisory Committee (EAC) comprised of the President and Chief Operating Officer; General Manager, Health, Safety and Environmental; and the Operations leadership team. The EAC works to ensure that the Company has appropriate management systems in place to monitor and review compliance with applicable rules, regulations, industry standards, protocols and international conventions. The Chief Executive Officer and the EAC set goals for continuous improvement and receive updates on implementation and progress made on these initiatives. In addition, the HSE Steering Committee, comprised of cross-functional leadership across the organization, including Operations, Engineering and Supply Chain, meets on a quarterly basis to discuss current status and Company goals pertaining to health, safety and the environment.

Implementation of Murphy's HSE Policy is assigned to the General Manager, Health, Safety and Environmental. This role reports to the Senior Vice President, Development and Health, Safety and Environmental, who reports directly to the President and Chief Operating Officer. The President and Chief Operating Officer in turn reports to the Chief Executive Officer. All Murphy executives receive weekly reports on HSE activities and performance.

Safety has been included in Murphy's Annual Incentive Plan (AIP) since 2008. The safety goal is based on the Company's Total Recordable Incident Rate (TRIR), see page 54 for further details.



HEALTH, SAFETY AND ENVIRONMENTAL MANAGEMENT SYSTEM

We strive to achieve incident-free operations through continuous improvement processes managed by Murphy's HSE Management System (HSE-MS), which engages all personnel, contractors and partners associated with Murphy operations and facilities, and provides a consistent method for integrating HSE concepts into our procedures and programs. The Murphy HSE-MS includes Global Standards and Business Unit (BU) programs that cover HSE policies, procedures, regulatory requirements and audit/assessment requirements. As part of our continuous improvement efforts, the Global Standards are reviewed every three to five years. For details on the environmental aspect, please see the Environmental Protection and Conservation section (see page 13).

THE HSE-MS CONSISTS OF FOUR LEVELS



- 1 HSE Global Policy**
Direction is provided by Murphy's HSE Policy and HSE-MS framework.
- 2 Global Standards**
Expectations are articulated through associated global standards.
- 3 Business Unit Programs, Plans and Procedures**
Business unit programs outline the requirements and objectives, to ensure implementation of the expectations in daily activities.
- 4 Site Procedures and Work Tools**
Site-specific procedures and work plans are in place to achieve the requirements and ensure safe work practices and regulatory compliance.

THE HSE-MS FRAMEWORK IS ORGANIZED AROUND 11 ELEMENTS

Within each element is a set of expectations. These expectations are supported by global standards and detailed programs, plans, procedures and work tools. Elements include management and employee commitment, contractor management, training, emergency response, incident reporting and investigation, and evaluation and improvement.



SAFETY PERFORMANCE MONITORING AND MEASUREMENT

We use a range of performance metrics to assess and measure our safety culture, and derive accountability for safety performance. Each year, we set a TRIR¹³ target for executives and employees as part of our AIP, as discussed in our [2024 Proxy Statement](#). In 2023, we met our annual target range.

In 2023, our TRIR for employees and contractors was 0.28, down from 0.37 in 2022. The majority of these recordable incidents were minor in nature in both years. Lost Time Incident Rate¹⁴ (LTIR), including employees and contractors, increased year-on-year, from 0.03 in 2022 to 0.08 in 2023. Our HSE and Operations teams have conducted investigations to determine the causes for the increased LTIR and the appropriate actions to address the underlying causes.

Murphy has consistently outperformed the US Bureau of Labor Statistics' (BLS) average safety performance for the oil and natural gas extraction industry, as illustrated in the charts on the right.

There were zero work-related fatalities in 2023.

INDUSTRY COLLABORATION

Murphy actively participates in industry efforts to advance safe operations. For example, for our Gulf of Mexico operations, we work closely with the Offshore Operators Committee (OOC) and the Center for Offshore Safety. For our US onshore operations, we actively engage with the Onshore Safety Alliance (OSA) and for Canada onshore, with Energy Safety Canada. Our employees sit on various subcommittees and workgroups of these organizations. We also participate in safety-related initiatives through the HWCG LLC, a consortium of deepwater operators and non-operators in the Gulf of Mexico, and the American Petroleum Institute (API). Murphy also utilizes ISNetWorld as a platform to collaborate and share best practices with other non-oil and natural gas industries.

HEALTH AND SAFETY CERTIFICATION AND AUDIT

Our HSE-MS and Global Standard for Audits and Assessments require each Murphy business unit to conduct internal HSE field audits every three years. The scope of the Audits and Assessments include the HSE Management System, Contractors, Field Evaluations, Regulatory Audits or Requirements and Cold Eye Inspections, which are condensed audits with no advanced warnings. All findings and corrective actions are tracked to closure through our Audit and Assessment software.

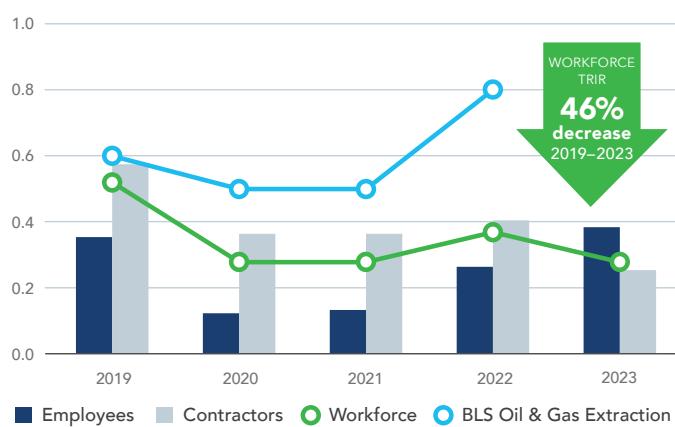
MEETING AIP TARGET RANGE TRIR SAFETY METRIC

2021 2022 2023



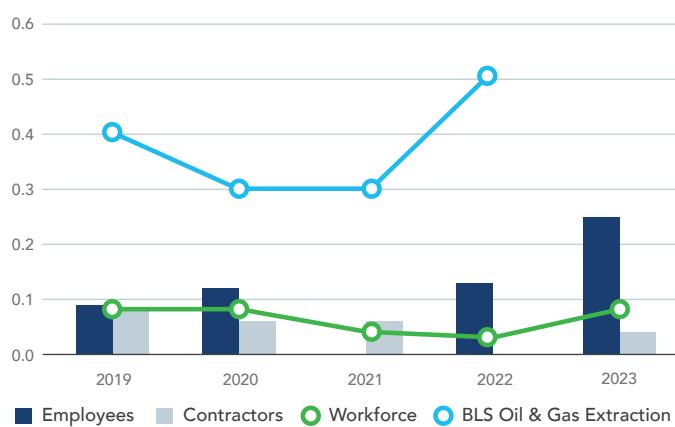
TOTAL RECORDABLE INCIDENT RATE AND PEER BENCHMARK

Per 200,000 Work Hours



LOST TIME INCIDENT RATE AND PEER BENCHMARK

Per 200,000 Work Hours



Source: Bureau of Labor Statistics, Incidence Rates of Nonfatal Occupational Injuries and Illnesses by Industry and Murphy internal

¹³ Number of US Occupational Health and Safety Administration (OSHA) recordable injuries and illnesses throughout the year, per 200,000 actual hours worked.

¹⁴ Number of OSHA recordable incidents that result in time away from work throughout the year, per 200,000 actual hours worked.

We also use this software tool to track HSE inspections, which are conducted frequently and, in many cases, daily. Opportunities for improvement are identified during this process, and corrective action plans are created to ensure that all items are addressed. Nonconformances are identified and improvement actions are submitted to business unit leadership.

At our US offshore facilities, a third-party audit is conducted as part of the requirements for the Center for Offshore Safety's Safety and Environmental Management System (SEMS) Certification. The most recent audit was completed in March 2022, in accordance with the regulatory three-year requirement. BSEE also conducts regular inspections of our offshore facilities and drilling rigs to ensure safety and environmental compliance across our Gulf of Mexico operations. Additionally, we proactively meet with BSEE on a quarterly and annual basis to review performance and continue to build a strong partnership.

Murphy contracts with independent, third-party rig quality assurance audit companies that advise on HSE risk mitigation. Specific activities undertaken by expert third parties include:

- Performing electrical and mechanical inspections of key drilling machinery and components on the rigs.
- Inspecting key safety components of the control systems on the rigs.
- Reviewing any current acceptance test plans and determining relevant sections for software, network and controls testing.
- Ensuring that vendors' changes to software and related control systems have been documented, and that backups are available.
- Ensuring compliance with software configuration processes.

In 2022, Murphy's Canadian HSE Management System received a Certificate of Recognition (COR) from Energy Safety Canada. Energy Safety Canada is the certifying partner for the Canada Partnership in Injury Reduction (PIR), established through Canada's provincial Workers' Compensation Boards (WCB).

The COR program has become the national standard for safety awareness, accreditation and improvement in Canada. The program is designed to improve worker safety and reduce costs through savings from more favorable insurance rates, as well as reductions in lost productivity, replacement worker training and property damage.

After obtaining certification, we have continuously improved our performance through internal and external audits, scoring higher year after year as a result of internal program enhancements. Annual internal validation audits will continue to be performed, with an external audit cycle every three years.

BUILDING A CULTURE OF SAFETY

Safety must be a top priority for every employee, every day. We work hard to build a culture of safety across our organization. In addition to our regular training and exercise drills, we advance this culture through the following programs:

Stop-Work Authority

Every employee and contractor has the authority, the right and the obligation to stop unsafe work. This is a fundamental tenet of Murphy's safety culture, and it applies to everyone, including new crew members, experienced crew members, supervisors, managers and service company personnel.

Elements of Stop-Work Authority are: (1) You must stop the job if you see an unsafe act or condition; (2) You must stop the job if you are unsure of the plan, or you see someone else who is not sure; (3) If conditions change, you must stop the job and confirm that your initial hazard controls are still adequate; and (4) In all cases, when you stop the job, if you cannot make it right yourself, discuss any concerns with your supervisor before starting work again. Murphy's executive leadership team stands firmly behind Stop-Work Authority, empowering all workers to take immediate action to preserve their own safety and the safety of those around them.

Observation Program

The Observation Program is a smartphone-based application that allows workers to record and document safety observations in real time in the field. This repository of data provides a basis for analyzing safety trends across our field operations and allows us to focus our repairs and maintenance, training and prevention efforts to improve overall safety performance. The Murphy HSE Team reviews all entries monthly for any pending corrective actions for the organization to address. Data collected in 2023 indicates that workers are engaged in the observation process and using the reporting systems effectively.

Hazard Hunts

We have implemented multidiscipline, business unit-specific Hazard Hunts to identify and mitigate potential safety and environmental hazards in the workplace. Our offshore teams conduct weekly Risk-Based Inspections, which allow small crews to focus on equipment or processes to ensure any potential hazards are being captured.

Safety Stand-Downs

We use Company-wide Safety Stand-Downs during which everyone stops work to focus on safety issues to bring together senior management, employees and contractors to demonstrate a unified commitment to safety. Safety Stand-Downs are also utilized on a location-specific basis to address any immediate concerns or issues.

Contractor Engagement

Engaging our contractors in our safety procedures and standards is critical to the overall safety of our operations. Our approach to contractor engagement is focused on two levels:

- (1) The executive level, where Murphy's senior leadership meets with key contractors to set clear expectations of our commitment to safety in the workplace, and
- (2) Small group contractor engagement sessions in the office and field locations to provide the same message, while also creating an opportunity to receive feedback and input on how we can collaborate and improve our safety performance. We continue to build strong partnerships with our contractors to ensure an overall, unified HSE culture for everyone working on any Murphy location.

See page 57 for more information on contractor management.

Process Safety

Asset Integrity and Operations are at the core of our Process Safety initiative and play a key role in preventing serious incidents. For additional details, please refer to Asset Integrity and Process Safety in the Environmental Protection and Conservation section (see page 44).

Using Big Data and Technology

Murphy targets safety improvements and efficiency gains throughout our operations by using data sharing and machine learning, which optimize field development programs and thereby reduce potential safety hazards and environmental impacts and waste.

HSE Training and Competencies

At least annually, Murphy evaluates and, as needed, updates its HSE training requirements for all employees and contractors. Training for all employees, whether in the field or office, is tracked for completion through our learning management system. In 2023, the average hours of health, safety and emergency response training per employee (including office and field personnel) was 14 hours, and per US-based contractor was 15 hours.

As part of our commitment to continuous improvement to safe and successful operations, we are rolling out an enhanced global competency program designed to develop superior performance by first defining superior performance and then identifying the knowledge, skills and abilities (KSAs) critical to success in a job function. By assessing our workforce's KSAs, we intend to focus on gaps identified, to further develop our employees. We believe this approach is more impactful than broader, more general training. We expect to implement this program globally by the end of 2024.

HSE Management Software

Our HSE Management Software tracks the audits and assessments being conducted and the corrective actions required, and verifies that they are closed out correctly and in a timely manner.

HSE CEO Excellence Award

Founded in 2014, the CEO HSE Excellence Award is an annual recognition presented to a business unit, department or team that has been recognized for outstanding HSE performance.

Vehicle Safety

Our vehicle monitoring system is installed in all Company vehicles and helps to monitor all driving habits and identify the location of vehicles in the event of an emergency. The derived data is also used to enhance training and safety communications to employees.

Life-Saving Rules (LSR)

We continue to communicate the nine **International Association of Oil & Gas Producers** (IOGP) Life-Saving Rules with an added 10th rule, Fit for Duty, as a clear training and communications platform for safety risks and mitigations. Training and communication on LSR include Murphy-specific videos in which employees and contractors discuss the importance of following the LSRs both on and off the job. This program empowers our workforce to implement safe behaviors at work and at home. At the end of 2023, over 1,000 safety observations pertaining to our LSR campaign were submitted for safe and/or unsafe conditions. (See page 55 for more on our safety observation program).

LIFE-SAVING RULES



Bypassing
Safety
Controls



Confined Space



Driving



Energy Isolation



Hot Work



Line of Fire



Safe
Mechanical
Lifting



Work
Authorization



Working
at Height



Fit for Duty

CONTRACTOR MANAGEMENT

A key element of our HSE-MS is Contractor Management. Contractors play a significant role in all operations and represent more than 80% of the work hours performed. Carefully selecting and collaborating with contractors is vital to ensure a unified commitment to maintaining a safe place to work, and ultimately improving HSE performance. Per the HSE-MS framework, contractors working on Murphy sites are required to be registered on ISNetworld, a global leader in supplier and contract management. Murphy has a qualified supplier list to pull from on ISNetworld with details on contractor safety performance, regulatory registration information, regulatory compliance and insurance, to verify that the very best contractors are being used.

When choosing to partner with a service provider, Murphy first utilizes ISNetworld to assist in pre-screening, by assessing the contractor's HSE policies, performance and internal HSE management systems. For select major contractors, Murphy goes a step further and performs a detailed bridging process, where all the service provider's HSE policies and procedures are individually evaluated against Murphy's policies and procedures. Through this bridging process, we choose the more stringent HSE performance standards to govern the work contractors perform. Other non-HSE screening factors we use to assess suppliers are discussed in the Supply Chain Management section (see page 81).

Murphy requires contractors and subcontractors entering Murphy-operated locations to have the same safety industry training certifications as employees. All personnel, including contractors and subcontractors, working at Murphy locations must have basic industry safety training certifications such as SafeLandUSA and Energy Safety Canada – Common Safety Orientation for onshore, plus SafeGulfUSA, Rigpass, Helicopter Underwater Rescue Training (HUET), Standardized Emergency Management System Awareness and United States Coast Guard (USCG) Marine Trash and Debris Water Survival for US offshore. In addition, contractors must attend Murphy's HSE Orientation before starting work at a Murphy location. Murphy maintains a Qualified Supplier List (QSL) for each business unit, to identify service providers that are permitted to work at Murphy locations.

Throughout the year, Murphy hosts contractor engagement sessions with service providers for each business unit. During these structured workshops, we review HSE performance, develop joint performance goals and share lessons learned. To further promote safe and environmentally compliant performance, Murphy has established key safety and environmental performance indicators with several major service providers, and the KPIs are continuously reviewed throughout the duration of their contracts. Additionally, Murphy HSE personnel and ISNetworld regularly conduct third-party vendor audits. In 2022, Murphy developed and shared a transparent program outlining Murphy's HSE requirements, which allows contractors to verify that they are meeting or exceeding our standards. This approach provides the opportunity for strengthened partnerships with the contractors and improves their organizations' requirements prior to performing work at any Murphy location. Murphy also shares all our LSR and HSE alerts with all our contractors and sub-contractors.

Murphy continues to build a strong partnership with our contractors through field and office assessments. These assessments allow both parties to share ideas, practices and lessons learned, and enable us to verify whether contractors are meeting the Murphy Global Standards.

Murphy requires third-party contractor companies to conduct random drug testing on their employees. To supplement this, since 2022, all asset groups contracted a global third-party consortium to implement standardized random drug testing for all contractors and vendors working at any Murphy location. The consortium is linked with ISNetworld, allowing us to monitor companies and individuals visiting or working at our facilities. This consortium allows Murphy to effectively manage third-party screening under a comprehensive umbrella, across all registered oil and natural gas operators.

Thanks in part to our contractor management efforts, our total number of recordable contractor incidents improved from 11 incidents in 2022 to 7 incidents in 2023.



EMERGENCY RESPONSE AND PREPAREDNESS

Murphy takes an all-hazards approach – meaning we proactively consider all possible risks, incidents and events – to developing our preparedness for events that have the potential to negatively impact our employees and contractors, the general public, the environment, facilities, operations and other stakeholders. We have plans and procedures in place to minimize environmental and safety risks and hazards and respond to emergencies if they should occur.

Any stakeholder can report an emergency, and emergency phone numbers are posted at every field location.

We have developed Emergency Response and Crisis Management Plans to respond to a wide range of possible emergency events. Murphy has a dedicated Manager of Security and Emergency Response, who is responsible for emergency preparedness and response-related activities.

Every operating office location maintains an Incident Management Plan, and Well Containment Plans are established for all active wells.

The Incident Management Team structure includes a Public Information Officer, who prepares messages, communications and press releases for the team if necessary. For internal emergency messages, a proprietary communication system, Murphy Alert (MIR3) is utilized, which allows a combination of text, email and voice notifications, and allows for responses.

Because Murphy recognizes that emergency response plans are most effective when accompanied by regular and comprehensive training, a global training and drill schedule is maintained across all business units, providing well containment and spill exercises, Incident Command System training and business continuity planning exercises. Training and drills comply with all relevant regulations and engage external emergency response resources and agencies.

In 2023, a total of 15 relevant training courses, tabletop exercises and major response drills were conducted across the organization. In addition, more than 600 regulatory and nonregulatory drills were conducted at our office and field locations. For major drills conducted, our contractor work groups and regulatory agencies are invited to participate, and we encourage knowledge sharing across all functions. This allows Murphy to build strong relationships and rapport with stakeholders, to help us address any future events that may occur. For all drills and exercises conducted by Murphy, an after-action review is performed to help identify and improve any gaps in our processes and procedures.

We review our Business Continuity Plan on an annual basis, and update it as needed. On a regular basis, each business unit performs a Business Impact Analysis to understand the resources needed to conduct business as usual following a major event, such as a hurricane. We also collaborate with a third-party crisis and emergency management specialist firm to streamline existing processes.

MURPHY UTILIZES A THREE-TIERED APPROACH TO EMERGENCY RESPONSE

1 Emergency Response Teams at the field level

2 An Incident Management Team at the mid-senior management level in the office

3 A Crisis Management Team at the executive level

HWCG LLC, Spill Response and Emergency Preparedness

Murphy is also an active member of **HWCG**, a consortium of deepwater operators and non-operators in the Gulf of Mexico, which provides rapid access to well containment resources and mutual aid personnel. This group also shares access to source control containment equipment and resources (capping stacks and associated equipment) for the US Gulf of Mexico. In addition, HWCG provides training and practical knowledge opportunities for its members through annual well containment drills and workshops.

Murphy conducts its own annual drills and training of our internal source control and spill response teams, to demonstrate our ability to respond to any incident, both onshore and offshore. These drills comply with all relevant regulations in countries where we operate and engage local emergency response groups, such as Clean Gulf Associates (CGA), Marine Spill Response Corporation (MSRC) and Oil Spill Response Ltd. (OSRL), as well as other key third-party specialists.



4

Investing in Our People

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 - 60** DIVERSITY, EQUITY AND INCLUSION
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 - 62** TALENT, RECRUITMENT AND DEVELOPMENT
 - 64** EMPLOYEE ENGAGEMENT



Our people are our most valuable resource. At Murphy, we believe in creating an inclusive culture where members of our workforce support and respect each other. We actively encourage and value everyone's perspective.

WORKFORCE DEVELOPMENT OVERSIGHT

The Board's Compensation Committee oversees and reviews the Company's key human capital management strategies, planning and assessments annually to ensure alignment with our short- and long-term business goals. This includes diversity, equity and inclusion (DE&I) programs, talent pipeline management and succession plans. Our Vice President, Human Resources and Administration, has overall managerial accountability for our human capital management and DE&I strategies and programs.

DIVERSITY, EQUITY AND INCLUSION

The rich experiences and backgrounds of our employees strengthen our Company, create a productive workforce and contribute to our success. We work to build an environment where everyone can respectfully share and be their authentic self.

We partner with many organizations to increase the diversity of candidates in our talent pipeline. We post open positions through eQuest, which distributes the roles to diversity and inclusion organizations including VeteranJobListings. We also post engineering job openings to the Society of Women Engineers and the National Society of Black Engineers.

We equip managers with tools to support inclusive hiring, including an interview guide to reinforce a fair and equitable process. We practice blind résumé screening for select roles, which involves removing candidate names and other identifiable characteristics to reduce any unconscious biases. We offer all employees a broad range of educational programs and resources to help foster an inclusive workplace.

In 2023, we continued to enhance our DE&I dedicated intranet portal. This is a tool for employees to explore resources including articles, videos and training, which we refresh regularly to reflect current events.

Also, in 2023, we participated in DE&I events hosted by the Greater Houston Women's Chamber of Commerce, Women's Energy Network and Greater Houston Partnership. We also recognize annual DE&I milestones, like International Women's Day and Veterans Day, and offer employees opportunities to participate in related Company and community events.

Murphy's approach to DE&I is comprehensive and goes beyond our efforts with employees. For example, Murphy is committed to supplier diversity and expanding partnerships with minority-, women-, veteran- and LGBTQ-owned businesses and those designated as a small business by the US Small Business Administration (see Supply Chain Management, page 81).

In 2024, we will continue to build our workplace DE&I efforts, with a focus on expanding employee resource groups (ERGs), extending university partnerships, and offering required and elective training and development opportunities for our employees, including a mentorship program.

Diversity, Equity and Inclusion Committee

The Diversity, Equity and Inclusion committee, which consists of volunteer employees at various levels in the organization, acts as a change agent to promote a culture where employees are respected and intentionally valued through open, honest and productive discussions. The committee is responsible for reviewing and recommending initiatives and partnerships that build upon our DE&I strategy and support our Purpose, Mission, Vision, Values and Behaviors (see page 3). The committee is sponsored by the Vice President, Human Resources and Administration, and led by our Senior Manager, Human Resources.

Employee Resource Groups

We view ERGs as forums for employees who share common characteristics and interests to meet and support one another in building their sense of belonging in our Company. ERGs also create opportunities for mentoring and career development for employees, as well as for fostering an inclusive workplace. In 2023, we created an ERG framework to help promote the groups as a vehicle for employee engagement. ERGs championed by our employees include Hispanic and Latino, and Asian and Pacific Islander communities. These ERGs are open to all employees to participate.

Understanding Our Workforce

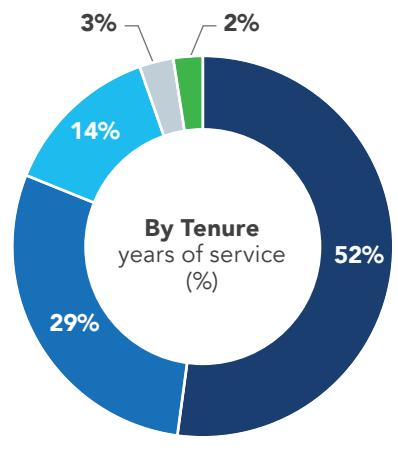
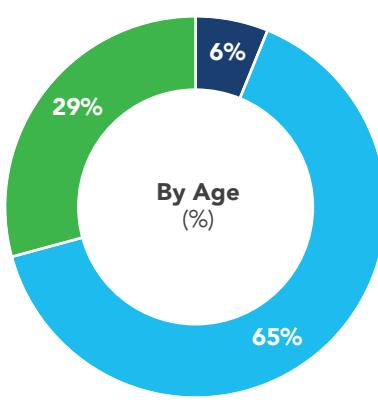
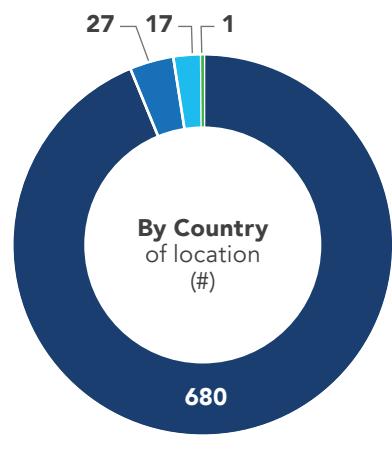
We track and report workforce demographics including age, gender and race/ethnicity for all full-time employees (see charts and tables below). Murphy does not have any part-time employees.

In compiling the data, we categorize employees according to the US Department of Labor's Equal Employment Opportunity Commission (EEOC) definitions. In response to stakeholders' request for the disclosure of EEO-1 data, we began publishing our EEO-1 filing in 2021 on our [website](#). A summary of this data, as well as our global representation of women, is outlined in the following tables.

In 2023, the percentage of women in Executive Management and Senior-Level Manager roles, as well as the representation of women in our overall workforce, improved compared to 2022. Furthermore, our percentage of racial/ethnic minority employees improved in all job categories except for the Other (Administrative Support and Field) job category, which was unchanged from 2022.

WORKFORCE DEMOGRAPHICS

725 Total Employees



● US ● Canada ● Vietnam ● Mexico

● Under 30 ● 30 to 50 ● Over 50

● < 5 ● 5-9 ● 10-14 ● 15-19 ● 20+

Representation of Women US and International		2019	2020 ¹⁵	2021	2022	2023
Executive and Senior-Level Managers		14%	12%	12%	16%	21%
First- and Mid-Level Managers		22%	17%	18%	22%	22%
Professionals		34%	34%	34%	35%	33%
Other (Administrative Support and Field)		20%	7%	7%	5%	7%
Total		27%	21%	21%	21%	22%

Representation of Minorities US-Based Only		2019	2020	2021	2022	2023
Executive and Senior-Level Managers		9%	12%	18%	26%	32%
First- and Mid-Level Managers		24%	23%	22%	26%	28%
Professionals		29%	33%	34%	39%	42%
Other (Administrative Support and Field)		36%	31%	31%	30%	30%
Total		29%	30%	30%	33%	35%

¹⁵ The reduction in the percentage of women in 2020 was primarily driven by: (1) the closure of the El Dorado, Arkansas, and Calgary, Canada, offices, where we historically had a high percentage of women employees; and (2) focused hiring efforts for field operations, which historically attracts a pool of male candidates.

Pay Equity

We are committed to a fair and living wage for all employees. Murphy conducts a biannual process to evaluate base pay equity across the organization by position, with a specific focus on equity across gender and race/ethnicity diversity. Murphy also reviews external market data to ensure fair and competitive compensation practices both for employees and new hires. Murphy works toward closing gaps if any issues are identified.

Local Hiring

Where possible, we prioritize hiring locally, which allows us to contribute to the communities in which we operate. For our operations outside the US, the majority of our people are nationals of the local host country. When immediate talent is not available, we ensure proper training is offered. In 2023, the percentage of local nationals was 100% in Canada and 71% in Vietnam. In the US, 96% of our workforce is local.¹⁶

Industry Recognition

We are honored that outside organizations recognize our efforts. In 2023, two of our leaders were recognized as honorees in the Houston Business Journal's "Women Who Mean Business Awards" for outstanding leadership in Energy. In addition, our Vice President of Human Resources and Administration was elected as the Chair of the Board of the Greater Houston Women's Chamber of Commerce and was recognized in the Latino Leaders magazine's "Top Latinos in C-Suite."

For the third consecutive year, we have received recognition from the Greater Houston Partnership as a "Best Place for Working Parents[®]" for our commitment to supporting working parents through our family-friendly policies and practices.

BENEFITS AND WELLNESS

Murphy provides a **comprehensive benefits** package designed to encourage employee wellness, healthier lifestyles and to help our people prepare for their future. This includes health coverage – medical, dental and vision – for employees and their families.

Each year, we review our benefits and enhance them, where appropriate, to align with the needs of our employees and maintain our competitive benefits package. In 2023, we expanded our benefit offerings to further support our diverse workforce, including:

- Moving to a healthcare provider with additional resources focusing on wellness, healthy lifestyles and ease of employee accessibility through improved technology.
- Enhancing benefits offerings by adding fertility and infertility coverage under the Prescription Drug plan to align with medical coverage.

Murphy provides a defined-benefit pension plan and a defined-contribution savings plan designed to assist employees in building savings for retirement. Employees

can access real-time pension information as well as model future retirement benefits via a web portal designed specifically for Murphy. Murphy retirees also have access to this portal and are able to view their defined benefits. In 2024, we will introduce a digital "Total Rewards Statement" that will provide employees real-time details on their total compensation package.

Wellness

Murphy offered a host of programs and educational sessions in 2023. To support employees' financial health, we enhanced 401(k) fund choices to expand diversification and sponsored financial education seminars through Fidelity. We also hosted informational sessions to expand awareness on our wellness benefits.

TALENT, RECRUITMENT AND DEVELOPMENT

We manage our employees' performance through a formal annual review process. This process covers career development discussions and assesses each individual's performance, as well as behaviors that are tied to our Purpose, Mission, Vision, Values and Behaviors. In addition to annual reviews, we encourage leaders and employees to connect on a quarterly basis to reflect on growth and future opportunities tied to their career development plan and goals.

In 2023, we implemented a tool that builds individualized training plans that align with personal career goals. Through this tool, our employees can develop in their current or future roles by taking advantage of courses that meet their unique training needs.

To help our employees develop and expand personal and professional skills, Murphy offers a variety of enrichment opportunities and job-related training throughout the year, including in-house, external and virtual seminars and workshops. Additionally, we sponsor employee participation in industry and professional organizations, and have introduced a mentoring program that allows us to identify employees with an interest in enhancing their development through mentorship (see box on page 63).

We prioritize succession planning across the organization to help ensure talent continuity and give us a competitive advantage. As part of this, our leadership thinks strategically about future challenges and works to build a talent pipeline that will meet our upcoming needs. In addition, our succession planning process allows us to grow best-fit candidates from within the organization, generally through developmental assignments and leadership training, which minimizes the time it takes to place a successor. This allows us to demonstrate to our employees that there is a significant opportunity to grow with the business and to reach their fullest potential.

¹⁶ US local workforce is defined as the number of employees who work in Texas and Louisiana divided by the number of employees who also live in Texas and Louisiana; Texas and Louisiana are the only US states in which Murphy Oil has a significant number of employees.

Murphy Mentorship Program

In 2023, our Human Resources team, in partnership with the Operations function, launched our inaugural Murphy Mentorship Program. The aim of the program is to assist and motivate employees to achieve their career and personal aspirations. Through the guidance, support and network that mentorship provides, employees are enabled to develop technical and other professional expertise, deepen their understanding of the Company's values and culture, and build leadership capabilities and diverse skills. The program received positive and constructive feedback from both the mentees and mentors. In 2023, a total of 80 mentees and mentors, or about 11% of our total employees, participated.

In 2024, the program was enhanced to reflect this feedback and extended to the rest of the Company. As of May 2024, participation was doubled, with a total of 164 participants in the program.

Murphy leadership strongly believes in encouraging and supporting its people who wish to continue their education. Murphy offers an Employee Educational Assistance Program, through which the Company contributes toward the cost of tuition, textbooks and some required fees incurred at accredited colleges, universities or trade schools.

Murphy employees represent the Company through several professional networks, affording them an opportunity for learning and development, sharing best practices and expertise throughout the industry, and supporting sustainable development in our local communities. Examples include the American Association of Petroleum Geologists (AAPG), Greater Houston Partnership and Greater Houston Women's Chamber of Commerce.

Murphy's Internship Program, which takes place over 12 weeks in the summer, offers a variety of opportunities to students from varying majors. The students are given active projects and partnered with a mentor to help guide their progress during the internship. The interns also have the opportunity to interact with other interns and Murphy employees across different functions, working on a variety of projects to learn about all aspects of the industry, as well as to engage in team-building and professional development activities.

We had interns join our Geology, Engineering, Finance, Data Science and Information Technology teams in 2023. At the conclusion of the program, we extended full-time employment to several of the interns. In 2024, we expanded our program to our HSE and Field teams.

Murphy also supports the API and is a supporter of its SkillsReady Program. SkillsReady is a job readiness program providing new entrants to the industry with a four-month course covering practical industry knowledge. Murphy employees also participate in the API Opportunity@Work subcommittee, promoting the hiring of non-degreed skilled personnel. By supporting initiatives like these, we are investing in our communities while building a recruitment pipeline for our Company and industry.

SOME OF THE TOP ELECTIVE COURSES ACCESSED BY OUR EMPLOYEES IN 2023

1

Owning
Your Career and
Leadership

2

Unlocking
Business Intelligence:
PowerBI Training

3

Professional
Networking

In 2023, through My Murphy Learning, our internal Learning Management System, we offered our workforce more than 15,000 professional and technical courses, with employee training time totaling approximately 12,400 hours, for a total spend of approximately \$982,000.

EMPLOYEE ENGAGEMENT

We believe that employee engagement is key to fulfilling our purpose, core values and organizational success. As a follow-up to our 2022 global employee survey, we conducted another survey in 2024 to build upon our understanding of employees' engagement and priorities. The survey covered topics including career development, DE&I, retention, engagement and communication. The 2024 survey achieved a 77% participation rate globally, exceeding our participation target. This was a marked improvement from the 2022 participation rate. We will use the findings from the survey to track progress and develop additional action plans. For example, the 2022 survey highlighted that our top strengths included: (1) employees' feeling supported and respected, (2) employees' being informed of Murphy's goals and (3) employee trust in leadership. We plan to publish some key results of the 2024 survey in our next Sustainability Report.

Other avenues we use to foster employee engagement include Company-wide, quarterly town halls, which provide employees a forum to be informed and heard. We also host appreciation events for our office and field employees throughout the year, which allow our HSE, Human Resources and Information Technology (IT) departments to engage with all our office and field personnel on pertinent topics.

Murphy's Ambassador Program is a group of employees from different locations, functions, roles and shifts throughout the organization who serve as representatives for all employees. The Ambassadors' mission is to be the voice of every employee, to live out Murphy's Purpose, Mission, Vision, Values and Behaviors, and to empower other employees to do the same. The Ambassadors help create a sense of community and strengthen the Company culture by championing Company initiatives, assisting in the dissemination of information and constructively circulating feedback from employees to the executive leadership team.

We have maintained a disaster relief fund since 2010 to aid employees who have been impacted by a natural disaster. The current Murphy Oil Corporation Disaster Relief Foundation, founded in 2017, is funded through contributions from employees, the Board, retirees and the Company. This fund epitomizes how our employees live out our values of supporting each other and making it better.

Retention and Turnover

We track global voluntary employee turnover, broken down by geographic location. This data is shared on a regular basis with our executive leadership team to develop our human capital strategy. In 2023, the Company's global voluntary turnover rate was 6%, a marked improvement from the prior year.

Our industry is facing a talent shortage. To help with this, we partner with employees and leaders across the organization to build action plans to improve retention. Areas of review include career progression, flexibility in the workplace and rewards and recognition. We continued programs to enhance the employee experience at Murphy such as the "Dress for Your Day" policy, our summer remote work program and Murphy Mentorship Program.

Additionally, we have worked to enhance our talent pipeline with multiple internal and external programs, such as our Internship Program, relationships with academic institutions, API's SkillsReady Program and nonprofit Opportunity@Work. We also encourage employee participation and open communication at the grassroots level, through the Ambassadors, DE&I Committee, department town halls and interactive sessions with our leaders and executives.

STEP UP AND LEAD

Investing in Our Leaders to Improve Team Performance, Enhance Collaboration and Foster Innovation

In 2023, Murphy committed to further build on the quality of our leadership. We partnered with the Harvard Business School to host two leadership programs for senior leaders and department heads. Over a period of 10 to 15 weeks, 82 of Murphy's leaders engaged in various learning activities to reflect on leadership skills and capabilities needed to enhance their personal effectiveness and that of their teams.

The programs were an overall success, with a 92% completion rate and over 1,100 cumulative learning hours spent. The feedback received from participants further echoed the value of the program, with an overall high level of satisfaction. Course topics that were highly rated by participants included content relevance, newly developed skills/insights and improved relationships within the team and among leaders across the organization.

As one leader commented, "This training serves as a reminder for me to focus on my team and to ensure understanding of and alignment with the Company's goals. Furthermore, the importance of trust and motivation within teams was emphasized as a win-win to the employee and the Company."

5

Community Engagement

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Positive relationships with the local communities in which we work are critical to our operations. But being a good corporate citizen and community member goes beyond business – it's core to who we are as a company.

COMMUNITY ENGAGEMENT OVERSIGHT

The Health, Safety, Environment and Corporate Responsibility (HSE&CR) Board Committee has oversight of policies and matters pertaining to communities, human rights and Indigenous rights and engagement, while managerial oversight lies with our Executive Vice President, General Counsel and Corporate Secretary.

WORKING WITH COMMUNITIES

When possible, we work in partnership with our communities to understand our impacts and opportunities to succeed together. We seek to participate in constructive community engagement and maximize our positive impacts on local communities, while minimizing any negative impacts. Before we make an investment or commence any new operation, we follow processes to identify local community and stakeholder concerns and work to effectively mitigate any known associated risks. This includes conducting community and social impact assessments before settling in new areas, conducting consultations at early stages of a project and ensuring ongoing consultation mechanisms are in place.

Murphy communicates with host country and community stakeholders, including regulators, nongovernmental organizations and other policy influencers, to better understand their concerns applicable to our operations and to mitigate potential risks to the Company's license to operate. Our active engagement with stakeholders helps us to better understand their interests and concerns, leading to mutually beneficial outcomes. This engagement is carried out in accordance with our **Code of Business Conduct and Ethics**.

When we are considering starting a business operation in a new country, we assess the nontechnical, aboveground risks. This includes an assessment of key demographics, geography, economic standing and outlook, political system and geopolitical relations, regulatory and fiscal regimes, human rights and Indigenous rights, and political and security risks.

We seek opportunities to support local communities when negotiating and entering production-sharing contracts, for example through:

- Prioritization of local suppliers
- Investment opportunities for local content
- Specifications for local companies or workers
- Commitments to social investment programs, to address the development needs of the community and/or contribute to education improvement and work-skill development of host country populations

Understanding and Responding to Community Feedback

We seek to be a good neighbor in the communities where we operate by listening to community interests and concerns and responding as best as we can. In the US, community stakeholders can raise concerns or grievances directly with our Land department, using an **owner relations website** and phone number. Murphy landowners are assigned a surface landman for any concerns, and landowners can also reach out directly to their respective landman to address any issue.

In Canada, as in the US, community stakeholders can raise concerns or grievances directly with the Murphy Land department team members, and via an emergency contact telephone number maintained by Murphy. The Land department is responsible for collecting, recording and assessing all community and stakeholder concerns or grievances. The team maintains responsibility for response and resolution, as per the British Columbia Energy Regulator (BCER) and Alberta Energy Regulator (AER) public consultation guidelines.

We are committed to ongoing consultation with local stakeholders throughout our operations. Our rigorous community consultation process is regulated by the AER and the BCER. Members of Murphy's surface land team actively participate on several community relations committees: the Canadian Association of Petroleum Landmen (CAPL) Field Acquisition Management (FAM) Committee and the Fox Creek Synergy (FCS) Partnership.

The CAPL FAM Committee's purpose is to bring together operators in British Columbia, Alberta and Saskatchewan to collectively address issues encountered by the surface land groups of various operators, and collectively find solutions to those issues. The participating operators also discuss continuous improvement and best practices for the industry as they relate to surface land. The FCS Partnership is made up of operators in Alberta and is focused on community engagement, including community and government updates to industry activities, community events (e.g., Day of Caring) and community investment.

RESPECT PEOPLE, SAFETY, ENVIRONMENT AND THE LAW

Respecting Our Landowners and Local Residents by Mitigating Noise

We take great care to engage early and work together to address concerns effectively. For example, before we move onto a new completion pad in Tupper Montney, British Columbia, we conduct a tabletop Noise Impact Study in accordance with the requirements defined by the BCER Noise Control Best Practice Guideline. We run multiple simulations pre-operations, including modeling the daytime and nighttime sound pressure levels at each of the residences in proximity to the completions operations, to ensure Murphy complies with applicable regulations. Once the completion equipment moves on-site, real-time decibel readings are taken at each residence to confirm the study. If the decibel readings are higher than modeled, we take steps to address sound impacts, such as adding additional sound barriers to mitigate the sound pressure levels. We take sound readings again after implementing mitigations to confirm the noise is under the defined decibel level.

In Kaybob Duvernay, Alberta, noise impact studies are completed as part of the facility permitting process, to determine impact on any nearby residences. We implement recommendations of the noise impact studies on a case-by-case basis.

In our Eagle Ford Shale assets in Texas, we have undertaken research to understand and mitigate impacts of gas lift compressors on nearby residents.



Sound barrier installation at Eagle Ford Shale

Human Rights

Respect and dignity for everyone is a cornerstone of the way we do business and of our success. To Murphy, respecting all people is part of our core value to "Do Right Always."

Murphy developed a formal **Human Rights Policy** in 2021. This policy acknowledges our long-standing commitment to the dignity and rights of all people and formalized our practices to protect these rights. Our policy includes a commitment and process to identify and reasonably eliminate or minimize any negative impact our activities may have on human rights in the communities where we do business. Our policy and practices include a complete prohibition of child labor and forced labor, and the recognition that access to water is a fundamental human right. Our policy is further guided by the principles set forth in the **United Nations Universal Declaration of Human Rights**.

We recognize the function of government as the primary source of policy and protection for human rights and are committed to respect and comply with the laws of the countries where we do business. Our Code of Business Conduct and Ethics and **Supplier Code of Conduct** further set forth the expectation that we will do what is right, safe and considerate of the well-being of our people, communities and environment.

Our Board mandates adherence to these policies, which extend to our vendors, suppliers, contractors and partners through our written policies, contracts, directives and training. We encourage feedback and constructive dialogue with all relevant stakeholders, and will provide guidance and annual training to our employees on our Human Rights Policy and the appropriate procedure to promptly address any concerns that may be raised.

We do not operate in government-designated cultural or heritage sites, or other protected areas where our operations would violate local laws intended to protect the long-term conservation of nature, associated ecosystems and cultural values. Per the SASB definitions, we do not have reserves in or near areas of conflict, in or near Indigenous land, or in countries that have the 20 lowest rankings in Transparency International's Corruption Perception Index.

Protecting Indigenous Rights

We carefully consider the impact of our business on the Indigenous people in the areas of the world where we operate. In Canada, where Indigenous people are members of the communities in which we operate, our actions are guided specifically by our **Indigenous Rights Policy**.

When engaging and collaborating with Indigenous groups, Murphy respects the spirit and intent of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and its guiding principles, within the context of existing Canadian law and the associated commitments and roles that governments in those jurisdictions have relative to Indigenous groups. This includes operations near First Nations territory in British Columbia and Alberta.

In the future, as our global operations evolve and we expand our interactions with other Indigenous communities, we will modify our policy accordingly, to address any issues that may arise.

Grievance Reporting

We take our role as a responsible corporate citizen seriously and actively engage with various stakeholders as outlined in the Stakeholder Engagement section (see page 75). Concerns raised by any stakeholder will be reviewed, investigated and resolved through our grievance mechanism, which is overseen by our Corporate Compliance Officer. General concerns can be directed to our 24/7 Compliance Hotline (+1.877.808.1601) or www.MyComplianceReport.com (enter Access ID: MOC), both administered through an independent third party. Specific concerns can be directed to:

Royalty Owners and Community Stakeholders

US Toll Free: +1.888.475.2015

US Email: owner_relations@murphyoilcorp.com

Canada Toll Free: 1.888.999.0423

Human Rights and Indigenous Rights, and Employees

Compliance Hotline (24/7, third-party administered):

Telephone: +1.877.808.1601

Website: www.MyComplianceReport.com
(enter Access ID: MOC)

Compliance Officer: +1.281.675.9000

INVESTING IN OUR COMMUNITIES

Giving back to our communities is a key tenet of who we are. We believe that we can make the most impact in communities where we live and work, and we prioritize our focus and efforts accordingly. We support our communities through strategic partnerships with organizations that work on developing communities, and through community giving and volunteering. As members of the communities where we operate, our employees genuinely care about others and strive to be a force for good. To maximize our efforts for lasting community development, much of our efforts are multiyear investments, as opposed to one-off donations. For example, we have been involved with The United Way for over 50 years, the El Dorado Promise for 17 years and the South Texas Energy & Economic Roundtable (STEER) for 12 years.

Community Economic Development and Workforce Capacity Building

We invest in our communities to build the local workforce, expand opportunities and support specific community needs. We view these efforts as much more than philanthropy. They are strategic investments to help community development in the areas where we operate, and to increase the critical talents and services we and our communities need.

Murphy is a founding member of the STEER program in the Eagle Ford Shale. STEER was created, in large part, to support positive developments that are beneficial for the local communities and to successfully integrate the oil and natural gas industry into the region. In January 2020, STEER completed its merger with the Texas Oil & Gas Association (TXOGA).

STEER focuses on several critical community issues, including availability of housing, healthcare services and infrastructure, road safety, local skills development and environmental protection. STEER also holds a seat on the City of San Antonio Climate Action & Adaptation Plan Technical Committee. The committee serves as a community stakeholder forum to develop plans to implement climate mitigation and adaptation strategies. STEER continues to partner with local communities, colleges and universities to identify partnerships that will encourage innovation and environmental stewardship. In 2023, STEER conducted several tours with landowners, stakeholders and regulators to discuss environmental and safety topics.

"We view our efforts to support local communities as much more than philanthropy. They are strategic investments to help community development in the areas where we operate, and to increase the critical talents and services we and our communities need."

We also work with the API, NOIA and local chambers of commerce and business councils to support community and workforce capacity building. For example, Murphy is a supporter of API's SkillsReady Program. SkillsReady is a job readiness program providing new entrants to the industry with a four-month course covering practical industry knowledge. Murphy employees also participate in the API Opportunity@Work subcommittee promoting the hiring of non-degree skilled personnel. By supporting initiatives like these, we are investing in our communities, while building a recruitment pipeline for our Company and industry.

Murphy executives volunteer on the boards of several industry, academic and nongovernmental organizations, including the API, TXOGA, Louisiana Mid-Continent Oil and Gas Association (LMOGA), Louisiana State University Foundation, Greater Houston Women's Chamber of Commerce, Greater Houston Partnership's Executive Women's Partnership, National Charity League and United Way Women's Initiative of Houston.

Local Hiring

Where possible, we prioritize hiring locally, which allows us to contribute to the communities in which we operate. For our operations outside the US, the majority of our people are nationals of the local host country. When immediate talent is not available, we ensure proper training is offered. In 2023, the percentage of local nationals was 100% in Canada and 71% in Vietnam. In the US, 96% of our workforce is local.¹⁷ In addition, Murphy actively contracts with local and Indigenous suppliers across various international regions where we operate, in accordance with local law.

HOW WE SUPPORT OUR COMMUNITIES



Strategic Partnerships



Philanthropy



Employee Volunteerism

Economic Impact

In addition to delivering a financial benefit to our stockholders, we provide economic support to communities where we operate, through direct and indirect employment, payments to landowners and tax revenues to local and federal jurisdictions.

2023 ECONOMIC IMPACT HIGHLIGHTS



¹⁷ US local workforce is defined as the total number of employees who work in Texas and Louisiana divided by the number of employees who also live in Texas and Louisiana; Texas and Louisiana are the only US states in which Murphy Oil has a significant number of employees.

¹⁸ Includes income tax, sales, severance and ad valorem.

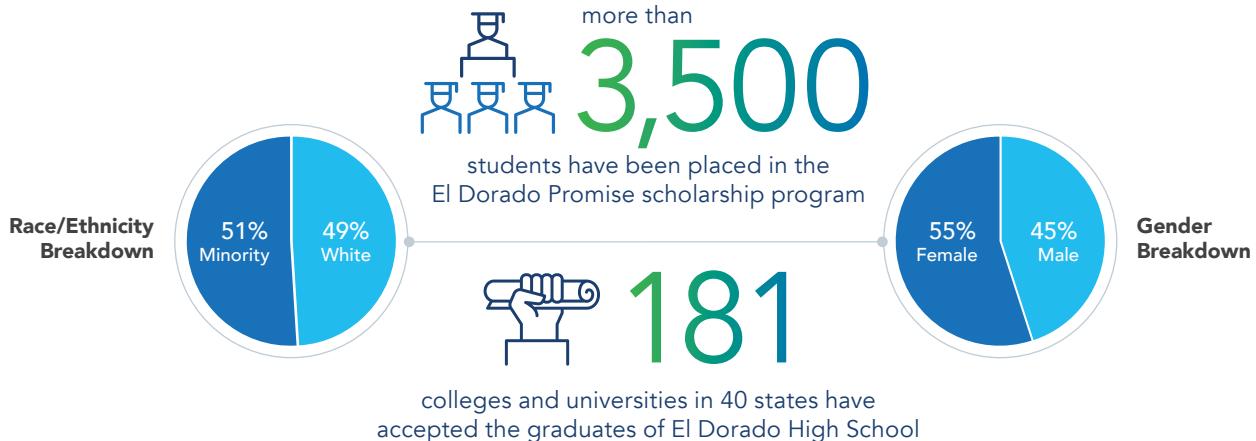
The El Dorado Promise

Besides collaborating with industry groups, we also work directly to build community and workforce capacity. Our founder's son, Charles H. Murphy, Jr., believed that with good education, people are more productive, and that to educate people is good business. Though we are no longer headquartered in El Dorado, Arkansas, where Murphy was founded, we continue our longtime commitment to offer opportunities and expand workforce capabilities in the community. We established the **El Dorado Promise Scholarship Program** ("Promise") in 2007, to encourage academic success.

Through an initial \$50 million funding commitment from the Company, which has been supported since, the Promise

enables graduates of El Dorado High School enrolled in the school district since the ninth grade to have their college tuition and mandatory fees paid at any regionally accredited university in the US (capped at the highest annual resident tuition at an Arkansas public university). In 2024, the Promise eligibility was expanded to include scholarships for El Dorado High School graduates pursuing vocational and technical training at South Arkansas College in El Dorado (see next page). This change is expected to positively impact workforce development in South Arkansas. The Promise has spurred the college enrollment rate of El Dorado High School graduates to surpass state and national levels. More information on benefits of the El Dorado Promise can be found on its website.

THE EL DORADO PROMISE IMPACT SINCE 2007



IMPACT STORIES

MAKING A DIFFERENCE WHERE IT MATTERS



Our Long-Standing Partnership With United Way

Murphy employees annually participate in a campaign to raise funds and volunteer time for the United Way. Our long-term partnership with the United Way began over 50 years ago, and has served to increase employees' awareness of the needs of their fellow citizens. In 2023, Murphy's North America locations contributed about \$390,500 to the local United Way through our employees' generosity and gift matching. Murphy is recognized as having achieved United Way of Greater Houston's 2023–2024 Chairman's Division. Over the last 20 years, Murphy and its employees have contributed a total of more than \$15 million to benefit United Way organizations.

As part of our 2023 United Way campaign, we hosted two impactful Days of Caring projects, which were embraced by the enthusiasm of over 100 volunteers. Volunteers came together to help revitalize the grounds of a local senior living facility so that the residents had a calming outdoor space to relax in. Efforts included replacing plants, cleaning and repairing a pond, painting and any other tasks needed to help beautify the property. Additionally, each year we gather to assist the Houston Food Bank by sorting food donations to be distributed to those in need in our local community. Through our collective efforts in 2023, our volunteers facilitated the provision of nearly 14,000 meals. For a third consecutive year, we were awarded the United States President's Volunteer Service Award for our volunteer efforts with the Houston Food Bank.

COMMUNITY GIVING AND VOLUNTEERING

For more than half a century, Murphy has been committed to giving and volunteering in our communities. In support of these efforts, we have built effective partnerships with educational, civic and charitable initiatives in the communities

in which we operate. We focus on issues that will have the greatest impact for our local communities and employees while building on our long-standing commitment and legacy to educational endeavors. Some of our 2023 efforts include:



Education and Training

- Participated in the Read Across America program
- Partnered with Spring Branch Independent School District, Houston (see page 72)
- Sponsored the Texas Diversity Council Summer Youth Program at Rice University
- Supported API SkillsReady and Opportunity@Work programs
- Sponsored school events in Carrizo Springs, Texas
- Continued commitment to the El Dorado Promise
- Provided scholarships to Fox Creek High School graduates in Canada
- Donated \$100,000 for construction of a new school to replace Robb Elementary in Uvalde, Texas



Health and Well-Being

- Conducted Wellness Fair to promote overall well-being and educate employees on physical, mental and financial health
- Volunteered at the Houston Food Bank
- Sponsored MS150 team to raise funds for the National Multiple Sclerosis Society's mission
- Hosted two blood drives for the Gulf Coast Regional Blood Center
- Hosted CPR and AED certification events for employees and their families at our Houston and field offices



Civic and Community

- Financial contribution and volunteering efforts for United Way (see page 70)
- Volunteered for an Earth Day elderly living facility beautification project in Houston
- Hosted Adopt-A-Beach at Galveston, Texas, to clean up the shoreline
- Financial commitment of \$300,000 over four years to the Louisiana Highway 1 Phase 2 Improvement Project
- Hosted "Dress for Success" Houston clothing donation drive
- Participated in St. Donivan Autism Foundation Sensory Friendly Trunk or Treat, Carrizo Springs
- Murphy Oil Charitable Foundation hosted Pull for a Purpose to raise money for Greater Houston community charities
- Participated in the Human Trafficking Energy Coalition Team Building Summit, Carrizo Springs

Aligned with these UN SDGs



Aligned with these UN SDGs



Aligned with these UN SDGs



In 2024, Murphy donated \$10 million to South Arkansas College for construction of on-campus residential housing and other facilities. We believe that this significant financial undertaking is a worthy investment in the people of South Arkansas, where Murphy's roots extend back over 100 years. In order to fulfill its mission and provide educational opportunities to El Dorado and the surrounding communities, South Arkansas College needs to continue

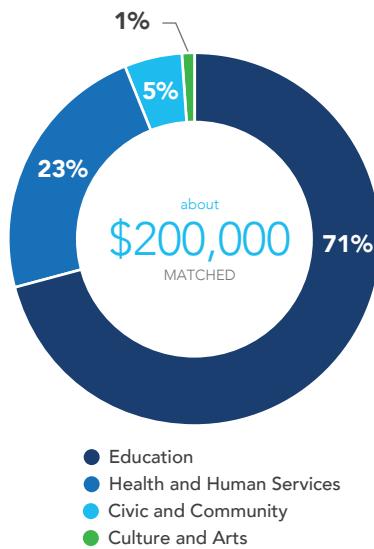
to grow and attract new students from a wider geographic area. Through Murphy's efforts in funding these key capital improvements to the campus, South Arkansas College will be able to increase its academic footprint and ultimately bring more college students to El Dorado who may decide to stay in the area, accept local jobs, and contribute to the overall health of the economy in South Arkansas.

Charitable Contributions

Each year, our Company makes contributions to various charities. In 2023, we distributed more than \$8 million to causes related to education, health and wellness, civic and community betterment, and others. In the last four years alone, more than \$11 million was disbursed to address specific needs of our local communities.

Through our Employee Gift Matching Program, offered to employees and non-employee directors in the US, we match qualified donations on a dollar-for-dollar basis. The Company increases its match of contributions 2:1 for educational and health institutions. We have built a legacy of contributing to educational institutions and programs. In 2023, Murphy matched about \$200,000 in gifts to 86 organizations.

EMPLOYEE GIFT MATCHING DONATIONS IN 2023



Employee Volunteerism

We recognize and support the positive impact our employees make. From volunteering as youth sports coaches to building homes and planting trees, to serving on city government commissions, school boards and chambers of commerce, Murphy employees enthusiastically give their time and talents to strengthen their communities. In 2023, our employees and families volunteered about 3,000 hours through Company-hosted events. In recognition of our 2023 voluntary efforts, we were presented several awards, as highlighted in the Impact Stories spotlights. In 2023, our Vice President, Investor Relations and Communication, was recognized as a Community Leader for the Year by the Greater Houston Women's Chamber of Commerce, for her support of women and girls in their communities and the workplace.

IMPACT STORIES

MAKING A DIFFERENCE WHERE IT MATTERS



Edgewood Elementary Partnership: Committing to Serving the Needs of Students and Teachers

In 2022, we began partnering with the Spring Branch Independent School District (SBISD) in Houston, which is near our headquarters. We were eager to build on and honor our strong legacy of championing educational causes. With more than 33,000 students, the SBISD student body is highly diverse – 73% minorities, 57% economically disadvantaged and 39% English learners. SBISD partnered Murphy with Edgewood Elementary to provide support throughout the school year, both monetarily and through employee volunteerism.

We initiated the partnership with a donation to the school to improve its fine arts program. Our employees participated in Reading Roundup, a Barbara Bush Houston Literacy Foundation program, to deliver high-quality read-alouds in first- and second-grade classrooms. Some of our other activities included sponsoring an appreciation luncheon for more than 80 staff members to ensure they feel valued and supported; hosting a book drive to provide students with a new or gently used book from a wish list prepared by the school to help them build their home library; and providing students taking standardized tests with a nutritious snack bag and an encouraging good luck card.

The SBISD recognized our commitment with its esteemed Good Neighbor Award in 2023, acknowledging our dedication to inspiring young minds and shaping the lives of children. Some of our efforts, including the Reading Roundup and various sponsorships, are continuing in 2024.

6

Governance and Responsible Business Practices

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 - 81** SUPPLY CHAIN MANAGEMENT



Our **Board of Directors and executive leadership team** are committed to sustainable business practices, which are premised on our Company's Purpose, Mission, Vision, Values and Behaviors (see page 3). Murphy's executive leadership team, with the guidance and support of our Board, implements, monitors and, if necessary, adjusts our sustainability efforts to serve the long-term interests of the Company and its stakeholders, including shareholders, employees, community members and other partners. Our governance practices provide powerful alignment between our business and ESG goals.

GOVERNANCE HIGHLIGHTS

Our Board assumes an active role in providing oversight of the management team in developing and executing on our business strategy. Our Board is led by strong, independent leadership in the form of an independent chair, and 90% of our directors are independent. Women chair 40% of our Board committees. Our Board has adopted governance practices that promote direct accountability to stockholders, including the annual election of each of our directors and the requirement to receive majority support.

Sustainability Governance

For details on the Board and managerial oversight of sustainability, please refer to Our Approach to ESG on page 9.

Board Expertise

The Board believes that as fiduciaries for stockholders, it is important for directors to possess a diverse array of backgrounds, skills and achievements that are crucial to leading the Company in challenging times for the energy industry. Our directors' qualifications include experience in accounting/audit, business development and corporate strategy, climate, corporate governance, cybersecurity, finance/banking, government relations/public policy, law and risk management. The Board's diversity encompasses — among other elements — race, gender, age and experience. For more information on our Board, and to view a Skills, Qualifications and Diversity Matrix of its members, see our [2024 Proxy Statement](#).

Executive Compensation

Sound compensation governance is a pillar of the corporate culture at Murphy. The Board's Compensation Committee and our executive leadership team continually seek to improve the alignment of our compensation programs with the interests of our stockholders, with industry developments and with our ESG goals. For over a decade, the Committee has included a safety metric in the Annual Incentive Plan (AIP) performance metrics, reflecting the Company's emphasis on safe operations by both employees and contractors. Each year, the Committee also includes a spill rate goal in the AIP Sustainability performance metrics, which highlights the Company's continued commitment to environmentally sound operations, including asset integrity.

Since 2021, to reinforce the Company's climate goals, the Committee has included a GHG emissions intensity metric, for which aggressive goals must be achieved to earn a payout. In 2023, the Committee approved a weighting of 20% for the AIP Sustainability performance metrics, which reflects a level commensurate with the weighting set in 2022. Metrics are set to deliver top-quartile industry performance, and inclusion of these metrics reinforces the Company's commitment to safe and environmentally sound operations.

BOARD OF DIRECTORS HIGHLIGHTS¹⁹

 90% Independent	 Separate CEO and Chair	 97% Average Stockholders' Vote Last 5 Years
 20% Tenure of 5 Years or Less	 30% Diverse by Gender	 10% Diverse by Race/Ethnicity
 80% Oil and Natural Gas Experience	 30% Climate Experience	 20% Cyber Experience

¹⁹ As of May 8, 2024.

STAKEHOLDER ENGAGEMENT

We view our stakeholders as important partners and actively engage with them regularly to share our strategy, goals and progress and to receive their feedback. Given the importance of stakeholder engagement to our Company, our Executive Vice President, General Counsel and Corporate Secretary and our Vice President, Investor Relations and Communications, oversee our robust engagement framework. Input from stakeholders helps to guide and improve our efforts in the short and long term.

A summary of our key stakeholder categories and details is listed below.

Stakeholders	Engagement Channels	Details
Stockholders	<ul style="list-style-type: none"> Annual stockholder meeting Equity conferences, debt conferences and investor non-deal roadshows One-on-one investor discussions, including ESG-focused meetings 	Our Approach to ESG, page 9 Stockholder Engagement, page 76 2024 Proxy Statement Contact our Investor Relations team Contact our Corporate Secretary
Employees	<ul style="list-style-type: none"> Quarterly Chief Executive Officer town hall meetings Department head and supervisor meetings Employee engagement surveys Murphy Ambassador Program Employee resource groups Professional development programs Wellness programs Safety trainings and Safety Culture surveys Ethics trainings and hotline 	Investing in Our People, page 59 Building a Culture of Safety, page 55 Worldwide Health, Safety and Environmental Policy Third-Party Ethics Hotline
Suppliers and Contractors	<ul style="list-style-type: none"> Assessments and engagement meetings Quarterly Business Reviews Reviews and audits Safety trainings and Safety Culture surveys, and exercise drills Monthly safety meetings ISNetworld 	Building a Culture of Safety, page 55 Contractor Management, page 57 Supplier Code of Conduct Worldwide Health, Safety and Environmental Policy
Landowners, Indigenous Groups and Local Communities	<ul style="list-style-type: none"> Designated grievance and resolution mechanisms for different parties, including Indigenous populations Ongoing engagement with parties Community outreach, volunteering efforts and philanthropy 	Working With Communities, page 66 Investing in Our Communities, page 68 Owner relations number and website Human Rights Policy Indigenous Rights Policy The El Dorado Promise Scholarship Program
Government and Regulatory Agencies	<ul style="list-style-type: none"> Participation in select health, safety and environmental (HSE) meetings, inspections and events Legislative and regulatory engagement Industry collaboration groups and trade associations 	Health and Safety Certification and Audit, page 54 Public Advocacy, page 81
Others: Peers, Universities, NGOs	<ul style="list-style-type: none"> Peer engagement through working groups, seminars and trade associations Joint research programs Outreach and partnership with nongovernmental organizations (NGOs) 	Identifying Climate Risks, page 28 Industry Associations, page 81 Investing in Our Communities, page 68

Stockholder Engagement

We value the feedback and insights that we receive from our stockholders through ongoing dialogue. During 2023, we participated in 24 investor events and met with over 400 investors. In addition to regular discussions with stockholders regarding our financial results, members of our executive leadership team proactively engaged in discussions with institutional investors to solicit their input on the strengths and weaknesses of the Company's strategy, corporate governance, executive compensation and sustainability.

In 2023, we offered one-on-one discussions with our 25 largest institutional investors, who hold approximately 60% of the Company's outstanding shares. Investors holding over 40% of the Company's outstanding shares responded favorably to the opportunity to share their views and provided meaningful input. Their feedback was considered as part of our annual materiality assessment process – see page 10 for details on the process and outcomes.

For more information on our stockholder engagement process and our responsive program changes in recent years, including 2023, please see our [2024 Proxy Statement](#).

RESPONSIBLE BUSINESS PRACTICES

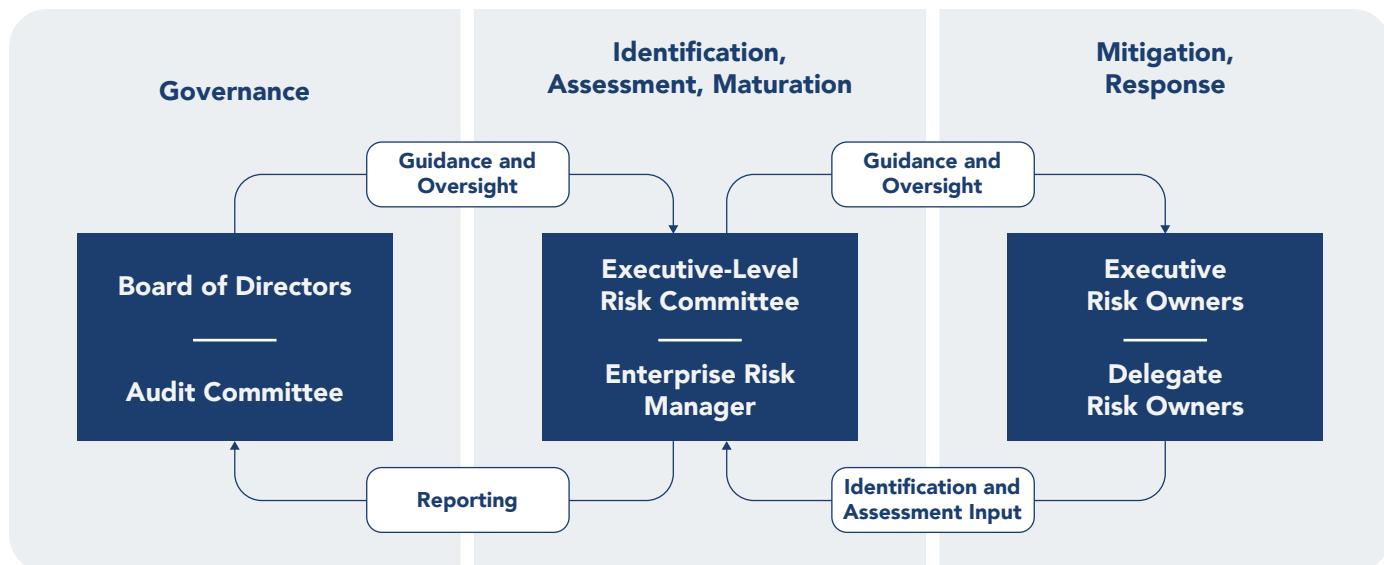
Enterprise Risk Management

Our annual ERM process is run with the goal of identifying material risks and integrating risk awareness and mitigation at all levels of the organization, from strategy to planning, execution, operations, partnering and financing. Our process covers major categories of uncertainty, including risks to our business model, finances, operational performance, ESG performance, regulatory compliance and reputation. Murphy's material climate and other ESG-related risks are governed by our ERM process.

The Enterprise Risk Manager and the executive-level Risk Committee collaborate to identify, assess and mitigate the major risks facing the Company. In the process of developing and prioritizing a Risk Register, the manager and the committee work closely with executive-level and next-level managers to identify and assess the drivers of uncertainty that affect the Company's operations and results. One outcome of this process is a clear matching of risk drivers to risk owners. In turn, the manager, the committee and the risk owners collaboratively develop plans for mitigating and responding to specific risks.

The Enterprise Risk Manager and the Risk Committee work together on a roadmap for continually enhancing the ERM process. In 2023, one identified process improvement was to increase the risk owner interaction frequency to quarterly for prioritized risks. The Enterprise Risk Manager and the committee also report regularly on their activities to the Audit Committee of the Board and, annually, to the full Board. In return, the manager and committee receive direction on processes and priorities from the Audit Committee and the Board. The Enterprise Risk Manager has specific oversight of our insurance program (insurable risks) and credit portfolio (counterparty risks).

ENTERPRISE RISK MANAGEMENT



Cybersecurity

Murphy has a dedicated Information Technology (IT) group that oversees technology infrastructure, cybersecurity and digital innovation, with a focus on enabling business success. From accurately capturing field sensor data in wellpads to dynamically analyzing terabytes of seismic data, technology is an integral part of our daily operations. As a result, the safety of our IT applications, systems and data is a key component of our ERM framework.

CYBERSECURITY RISK MANAGEMENT



20 DHS: Department of Homeland Security; FBI: Federal Bureau of Investigation; ONG-ISAC: Oil and Gas Information Sharing and Analysis Center

Murphy Cybersecurity Risk Management framework consists of:

Cybersecurity Governance – Murphy's security culture starts at the top. Our Audit Committee of the Board, Chief Executive Officer and executive leadership team receive cybersecurity briefings at least annually. This enhanced visibility, in turn, allows the Board and executive leadership team to make timely, data-driven decisions ensuring that Murphy, its employees, investors and partners are adequately protected.

Risk Management Strategy – IT and Business leadership, in consultation with strategic partners, have defined a unified Risk Management strategy, which focuses on People, Process and Technology, as per the table on the next page.

Cybersecurity Risk Management

Murphy's Cybersecurity Risk Management framework (see below) forms the foundation of the Company's Enterprise Cybersecurity Program and helps foster strong governance and a culture of security awareness.

RISK MANAGEMENT STRATEGY

Technology	People	Process
Murphy utilizes industry-leading technologies that focus on continuous monitoring and analytics built on advanced machine learning and artificial intelligence, to safeguard against sophisticated cyberattacks. Deployed technologies include next-gen firewalls, advanced endpoint and email protection, multifactor authentication (MFA) and Managed Detection and Response (MDR).	All Murphy personnel are required to complete cybersecurity training annually and have access to an ever-evolving catalog of over 200 cybersecurity courses. We have established communication channels to engage and educate our users on best practices, security guidelines and preventative measures to safeguard against cyberthreats.	Murphy's cybersecurity framework is aligned with industry-recognized standards such as the NIST 800 series and ISO 27000 series and provides the foundation for developing and integrating best-in-class cyber hygiene across all key business and operational processes. Continuous engagement with our internal and external stakeholders underpins our efforts to prevent and detect cybersecurity breaches.
In response to the increasing threat climate, Murphy continues to enforce enhanced security of its devices in 2023 by aligning protection of removable media, browsers, remote access protocols and admin tools, in line with the hardened National Institute of Standards and Technology (NIST) and International Organization for Standardization (ISO) standards.	Murphy IT employs an industry-leading security awareness and education platform to assess our users' vigilance toward social engineering attacks, such as phishing and Business Email Compromise, on an ongoing basis and auto-enrolls high-risk users in targeted awareness-training campaigns.	Murphy has forged strong partnerships with the DHS, FBI, ONG-ISAC and numerous top security companies. We routinely engage with these partners to discuss emerging cyberthreats and adversaries. These collaborations provide Murphy insights into oil and natural gas industry-specific threat intelligence, enabling us to adjust our response controls.
We ensure our business-critical systems are available 24/7/365, by employing a proactive disaster avoidance strategy that focuses on resilience, in addition to recovery. By building effective redundancy in our business-critical systems, we have reduced the recovery time of these systems and mitigated adverse business risks.	Our security professionals recognize the criticality of remaining up to date on emerging threats, breaches and cyber risks. One hundred percent of employees working on the Murphy cybersecurity team have earned and maintained industry-related certifications in 2023.	With the business need for rapidly evolving skills and technologies, we understand the importance of engaging service organizations to remain competitive. Murphy holds these service providers to a high standard and routinely reviews auditor-issued reports on the design and effectiveness of these service organizations' control activities.

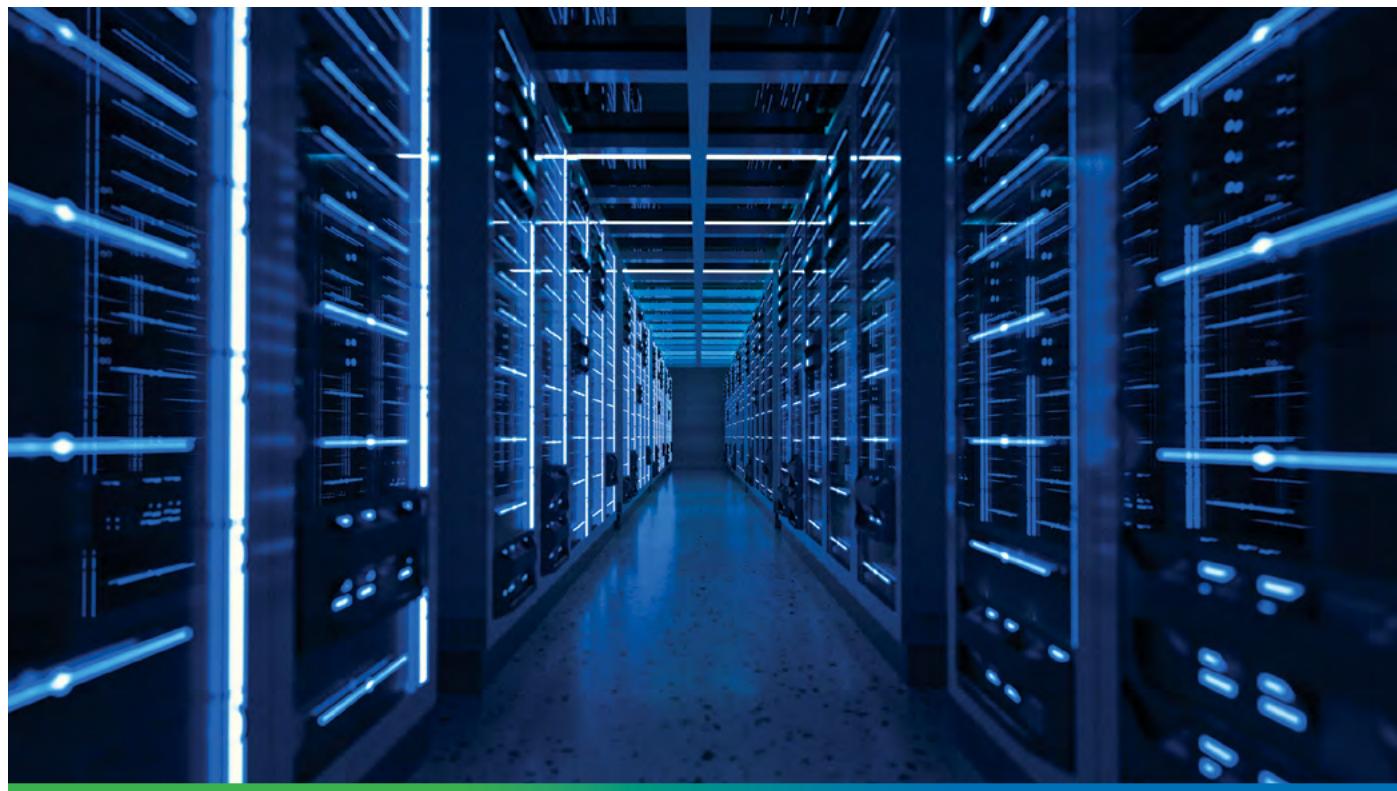


Recent Accomplishments and Upcoming Developments

Each year, Murphy's IT department aims to improve end user productivity, enable the business and enhance security, by implementing various strategic high-value-add projects. For 2023, Murphy IT focused on enhanced cyber capabilities, cyber hygiene and response readiness, by:

- **Enhancing Operational Technology (OT) Security –** We launched an OT Security Program to fortify our critical infrastructure while aligning with industry best practices.
- **Adopting an "Identity-First" approach –** Identity-based attacks dominated the 2023 cyber threat landscape, as 90% of businesses had an identity-related incident.²¹ To bolster our defenses against these types of attacks, we took a multipronged approach:
 - Implemented a modern Identity Threat Detection and Response (ITDR) solution to automatically respond to compromised identities.
 - Reduced the identity attack surface by implementing risk-based multifactor authentication, which leverages Microsoft's threat intelligence engine.

- Deployed a Privileged Access Management solution to secure and control access to privileged credentials.
- Enhanced the existing dark web reconnaissance capability by automating the end-to-end process. In 2023, our dark web bot remediated 177 compromised login credentials.
- Cyber Incident Response Plan readiness with the SEC Cybersecurity Rules – We refined our Incident Response procedures to establish clear protocols and conducted tabletop drills to assess preparedness against the new US Securities and Exchange Commission (SEC) disclosure requirements.
- Maintaining phishing rates below target – Our phishing fail rate average in 2023 was significantly better than industry, due to continuous phishing drills and awareness-training programs.



Over the last three years (as of July 2024), Murphy does not believe to the best of our knowledge that we have experienced any material impacts to our business, operations or reputation related to known cybersecurity attacks or other security-related incidents, including incurring any material expenses or the payment of any penalties or settlements. However, we recognize cyberthreats are constantly evolving and we are committed to cultivating a culture of security, remaining vigilant and continually improving our cybersecurity environment and controls.



²¹ Source: Identity Defined Security Alliance

Ethical Business Conduct

The Murphy **Code of Business Conduct and Ethics** (Code of Business Conduct) provides direction to all employees and suppliers on the requirement that everyone working for and with Murphy behaves ethically and in accordance with our policies and standards.

We are committed to human rights and Indigenous rights and have published these policies on our [website](#). Further discussion of human rights and Indigenous rights can be found in the Community Engagement section of this report (see page 65).

Ethics Training and Reporting

The Code of Business Conduct applies to all directors, executives and employees of Murphy Oil Corporation and its subsidiaries, as well as all contractors who perform work for Murphy, work at Murphy's facilities or otherwise perform work on behalf of Murphy. Individuals either hired as employees or engaged as a contractor are required to complete training on the Code of Business Conduct, as well as specific training regarding topics including anti-bribery and corruption, ethics and anti-harassment. In 2022, we published a comprehensive **Supplier Code of Conduct**, which is discussed on page 82.

Our executive leadership team is trained on and expected to adhere to an **enhanced standard** of compliance, with rules that impose additional expectations regarding their conduct.

We take violations of our policies seriously and inform employees that it is their duty to report suspected violations. Employees are encouraged to report infractions of the Code of Business Conduct and can do so anonymously through a third-party ethics hotline. Employees may contact the Company's Corporate Compliance Officer or the Audit Committee of the Board directly for any matter regarding the Code of Business Conduct, including those involving accounting, internal accounting or auditing matters. Our policy and process are designed to prevent retaliation against anyone who submits an inquiry or report regarding compliance with the Code of Business Conduct. We assure employees that there will be no retaliation for reporting suspected problems in good faith, and that those who retaliate will face disciplinary action. Our auditors periodically conduct audits regarding internal compliance with the Code of Business Conduct, and our Audit Committee is provided regular reports and resolutions pursuant to the Audit Committee Charter.

A Compliance and Ethics website on the Company's intranet emphasizes our commitment and facilitates access for our workforce to pertinent resources. The website includes a letter and video introduction from our Chief Executive Officer reiterating our commitment to our policies and values. It also includes readily accessible policies, FAQs, news and links to make reports or inquiries.

Committed to Ethics

The Code of Business Conduct is designed to emphasize the commitment necessary for those working for Murphy to act with integrity, including:

- Commitment to corporate citizenship requires compliance with applicable laws and regulations.
- Commitment to each other promotes Murphy as a safe place to work, including freedom from bullying, discrimination and harassment.
- Commitment to global business laws emphasizes that antitrust and other competition laws are adhered to and relationships with government officials throughout the world are properly managed.
- Commitment to stockholders ensures transparency in public disclosures and the protection of confidential information and intellectual property.
- Commitment that Murphy will not, and will not tolerate any attempt to, retaliate against anyone who makes a good-faith report regarding a possible violation of the Code of Business Conduct.

The Code of Business Conduct also addresses the need to avoid conflicts of interest and prohibits competitive relationships, misuse of Company assets and giving or receiving inappropriate gifts and favors. Because we take the issue so seriously, Murphy has a separate **Anti-Bribery and Corruption Policy** and an internal Gifts and Entertainment Policy. A detailed definition of what is considered bribery and corruption is outlined on the first page of the Anti-Bribery and Corruption Policy.

We regularly monitor the hotline and other reports of potential misconduct and address them consistently, promptly and thoroughly. We have structures in place to process whistleblower reports; specifically, we investigate alleged violations of any of these standards and, when necessary, apply disciplinary or corrective action. Our process for managing the reporting of concerns, including whistleblower reports, is outlined in our **Corporate Governance Guidelines**. The Corporate Compliance Officer is accountable for reviewing these reports with the Audit Committee of the Board.

PUBLIC ADVOCACY

Public Policy and Political Disclosures

International, federal, state and local policy initiatives can positively or negatively impact the success of our Company. So, it is imperative that we actively monitor and engage in public policy where appropriate and advocate for policies that support successful and responsible oil and natural gas operations in the US and abroad. We aim to promote laws and regulations that allow the development of resources in a safe, efficient and environmentally responsible manner. Our lobbying activities and political spending are overseen by the Nominating and Governance Committee of the Board and managed by our Director, Government Affairs, who reports to the Executive Vice President, General Counsel and Corporate Secretary.

As part of our efforts to proactively support broader public policy initiatives that allow for the responsible development of natural resources, we try to engage in meaningful discussions with policymakers and regulators on a variety of topics that impact operations for our industry. In the US, these engagements include policymakers and regulators such as the Department of Interior, Bureau of Ocean Energy Management, Bureau of Safety and Environmental Enforcement, Environmental Protection Agency, US Senate, and US House of Representatives. In 2023, these US legislative and regulatory policy outreach discussions included the offshore leasing program and onshore emissions reporting requirements initiated by the Inflation Reduction Act, as well as energy tax policy and offshore financial assurance regulations. Similarly, in Canada, we engage with the British Columbia Energy Regulator (BCER) and Alberta Energy Regulator (AER) on industry-wide policy issues. We have also engaged with regulators in Vietnam and Mexico on offshore oil and gas policy issues.

In 1981, the Murphy Oil Corporation Political Action Committee (MURPAC) was founded. MURPAC is a voluntary, nonpartisan political action committee that allows eligible employees to support candidates at the federal, state, and local level who are strong advocates on issues important to our business, our employees and the communities in which we live and work.

We comply with all applicable laws and regulations pertaining to our political advocacy, we maintain the highest ethical standards in interactions with government officials, and we report our lobbying activities and political contributions to the Board's Nominating and Governance Committee as well as to relevant government agencies. In the US, this includes the online **disclosure of federal lobbying activities** published through compliance with the Lobbying Disclosure Act and the **disclosure of federal political contributions** through compliance with the Federal Election Campaign Act.

In Canada, we disclose **payments to the government**, in compliance with the Extractive Sector Transparency Measures Act (ESTMA). ESTMA reporting contributes to global efforts to increase transparency and deter corruption in the extractive sector by requiring extractive entities to publicly disclose, on an annual basis, specific payments made to all governments in Canada and abroad.

Industry Associations

Murphy shares best practices, develops industry standards and expands our public and political advocacy through membership in allied industry trade associations and related initiatives. We review our trade association memberships on a regular basis to ensure alignment on industry and policy priorities, as well as to ensure the organizations' effectiveness and value for our Company and stockholders.

Murphy is currently a member of the following industry trade associations and initiatives: the American Petroleum Institute, Center for Offshore Safety, Environmental Partnership, Greater Houston Partnership, Greater Houston Women's Chamber of Commerce, HWCG LLC, Ipieca, Louisiana Mid-Continent Oil and Gas Association, National Ocean Industries Association, Offshore Operators Committee, National Petroleum Council, Texas Oil & Gas Association and US Oil & Gas Association.

Our positions on key ESG issues do not always align exactly with those of the industry associations and other groups of which we are members. Therefore, our membership does not necessarily indicate our support for all the organizations' positions.

SUPPLY CHAIN MANAGEMENT

Our suppliers are critical to the success and delivery of our operational goals. In 2023, we procured approximately \$1.9 billion in commercial goods and services from over 1,900 suppliers. We seek to work with suppliers that share Murphy's core values of safety, social responsibility and continuous improvement, as outlined in our Code of Business Conduct.

We strive to conduct all contracting and procurement activities in an ethical manner, in accordance with our Procurement Policy and applicable laws. The policy defines guidelines for specific sourcing requirements, conduct for the evaluation of formal tenders, contracting practices for recurrent goods and services, and required segregation of duties.

As part of our procurement process for operational vendors, a supplier qualification process is conducted in collaboration with various parts of the organization to ensure vendor suitability, based on an array of considerations. These considerations could include:

- Competitiveness
- Safety record
- Technical competence
- Financial stability
- Compliance history/record
- Environmental record
- Past performance
- Business alignment
- Geographic location
- Local content

As part of our standard contracts and pre-engagement due diligence, suppliers must comply with all applicable laws and regulations, including in HSE, conflicts of interest, anti-corruption/Foreign Corrupt Practices Act, and must maintain any applicable licensing or permitting requirements for their services. These contracts are required for all operational suppliers before work is begun. In addition, Murphy actively contracts with local and Indigenous suppliers across various international regions where we operate, in accordance with local law. During our vendor selection process, we also review available HSE data via ISNetworld and review financial resiliency via RapidRatings. See page 57 for more on our safety-related contractor assessments and engagement.

In 2023, the ESG data we collected from suppliers included acknowledgment of internal supplier policies relating to a range of sustainability topics. Some highlights include:

- A majority of our qualified suppliers report having both formal human rights and diversity, equity and inclusion policies in place
- 83% of our qualified vendor base report having an internal Code of Conduct for their employees
- 87% report also having a workplace anti-discrimination policy

In 2022, Murphy published a comprehensive **Supplier Code of Conduct** to which we require all our business partners to adhere. This Supplier Code of Conduct ensures that all our various suppliers, including security contractors, are held to the same ethical standards as those required of Murphy personnel in Murphy's own internal **Code of Business Conduct and Ethics** and **Human Rights Policy**. In addition to publishing the Supplier Code of Conduct publicly, we also require that all qualified suppliers provide an annual acknowledgment of the code via our ISNetworld portal for tracking purposes, and we will be expanding our compliance audits to include various ESG topics related to the code.

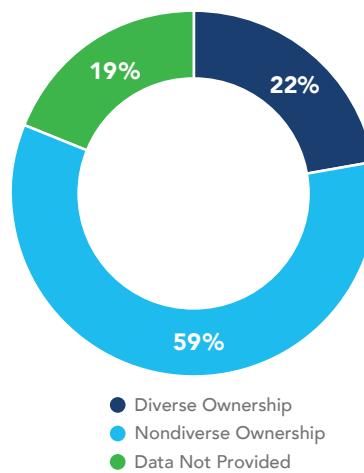
We believe that Murphy and our business partners holding each other mutually accountable to high ethical standards will help ensure that all parties strive to observe Murphy's ideal of "Do Right Always."

Supplier Diversity

We are working to increase the diversity of our supplier base as part of our commitment to diversity, equity and inclusion. We know that a diverse supplier base allows us to benefit from the creativity and differing perspectives that each vendor brings to our operations.

Based on questionnaires completed by approximately 950 of our qualified North American vendors in 2023, 22% of our suppliers reported having some level of diverse ownership within their organization (qualified as being minority-, women-, veteran-, LGBTQ-owned or designated as a small business owner by the US Small Business Administration).

DIVERSITY OF QUALIFIED SUPPLIER BASE



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PERFORMANCE DATA

	Units	2023	2022	2021	2020	2019
Greenhouse Gas (GHG) Emissions						
Operated Scope 1 Emissions	metric ton CO ₂ e	1,083,362	1,056,513	925,239	1,002,338	1,219,971
Operated Scope 1 Emissions From Flared Hydrocarbons	metric ton CO ₂ e	235,241	224,617	238,139	308,754	484,701
Operated Scope 1 Emissions From Other Vented Emissions	metric ton CO ₂ e	87,819	99,485	87,100	126,961	125,188
Operated Scope 1 Emissions From Combustion	metric ton CO ₂ e	734,158	697,810	569,976	536,777	576,871
Operated Scope 1 Emissions From Process Emissions ¹	metric ton CO ₂ e	934	6,907	7,146	6,980	7,965
Operated Scope 1 Emissions From Fugitive Emissions/Leaks	metric ton CO ₂ e	25,210	27,694	22,878	22,867	25,247
Operated Scope 1 Emissions by Component Gases						
Carbon Dioxide	metric ton CO ₂ e	943,971	898,087	783,664	819,017	
Methane	metric ton CO ₂ e	136,431	154,960	138,316	180,227	
Nitrous Oxide	metric ton CO ₂ e	2,960	3,466	3,259	3,094	
Operated Scope 1 Emissions by Source						
Flaring/Venting	%	29.8%	30.7%	35.2%	43.5%	50.0%
Fuel Combustion	%	67.8%	66.1%	61.6%	53.6%	47.3%
Other	%	2.4%	3.3%	3.3%	3.0%	2.7%
Operated Scope 1 Emissions From Methane	%	12.6%	14.7%	15.0%	18.0%	16.2%
Operated Scope 1 Emissions Covered Under a Regulatory Program ²	%	5.5%	6.7%	6.5%	7.3%	6.0%
Operated Scope 2 Emissions ³	metric ton CO ₂ e	28,170	31,707	42,028	33,974	30,349
Global Net Equity Scope 3 Emissions (Category 11: Use of Sold Products only)	metric ton CO ₂ e	24,300,000	21,900,000	20,600,000	21,500,000	

¹ For 2023, the methodology for calculating process (dehydrator) emissions was revised to account for the dehydrator vent streams being routed back to process instead of being routed to the flare.

² In accordance with the greenhouse gas regulatory programs specific to our Canadian operations.

³ Electrical usage was calculated using:

- US: For 2023, the average 2022 eGRID emission factors for ERCOT subregion in Texas; for 2022, the average 2021 eGRID emission factor for Texas; for pre 2022, Ecometrica (2011).
- Canada: For 2022 and 2023, Environment and Climate Change Canada's National Inventory Report (1990-2022): Greenhouse Gas Sources and Sinks in Canada, Part 3, for pre-2022, see Environment and Climate Change Canada's National inventory report archive at <https://publications.gc.ca/site/eng/9.506002/publication.html>.

	Units	2023	2022	2021	2020	2019
Emissions Intensities						
GHG Emissions Intensity (Total Scope 1 + Scope 2 Emissions) ÷ Gross Operated Production	metric ton CO ₂ e/MMBOE	10,157	12,151	12,950	12,809	16,234
Total Scope 1 + Scope 2 Emissions	metric ton CO ₂ e	1,111,532	1,088,220	967,267	1,036,312	1,250,320
Methane Intensity (Methane Released ÷ Methane Produced)	%	0.15%	0.20%	0.21%	0.27%	0.27%
Methane Intensity Amount of Operated Global Scope 1 Methane Emissions ÷ Gross Operated Production	metric ton CO ₂ e/MMBOE	1,247	1,692	1,852	2,228	2,564
Flaring Intensity Flaring Volume ÷ (Gross Operated Production x 10 ⁶)	Mcf/BOE	0.03	0.03	0.03	0.05	
Flaring Volume (Routine and Non-Routine)	Mcf	2,805,350	2,473,440	2,469,638	3,724,796	
Flaring Intensity Amount of Operated Global Scope 1 Emissions from Flared Hydrocarbons ÷ Gross Operated Production	metric ton CO ₂ e/MMBOE	2,150	2,508	3,188	3,816	6,293
% of Produced Gas Flared (Flaring Volume ÷ Gross Operated Natural Gas Produced)	%	1.2%	1.2%	1.4%	2.0%	
Gross Operated Natural Gas Produced	Mcf	239,902,680	211,395,330	182,932,176	183,586,483	
Gross Operated Production	MMBOE	109.43	89.56	74.69	80.91	77.02
Energy Use						
Total Energy Use	Gigajoules	13,874,675	13,198,209	10,730,532	9,967,813	
Total Energy From Renewable Sources	Gigajoules	53,148	68,774	65,871	53,793	
Total Energy From Renewable Sources	%	0.4%	0.5%	0.6%	0.5%	
Total Energy From Non-Renewable Sources	Gigajoules	13,821,527	13,129,435	10,664,661	9,914,020	
Total Energy From Non-Renewable Sources	%	99.6%	99.5%	99.4%	99.5%	
Total Energy Use From Renewable Sources at Corporate	Gigajoules	18,656	17,265	17,665	7,203	
Total Energy Use From Renewable Sources at Operations/Field Sites	Gigajoules	34,492	51,509	48,206	46,590	
Total Energy Use From Non-Renewable Sources at Corporate	Gigajoules	54,505	50,443	51,612	21,044	
Total Energy Use From Non-Renewable Sources at Operations/Field Sites	Gigajoules	13,767,022	13,078,992	10,613,049	9,892,976	
Total Energy Intensity	Gigajoules/BOE	0.13	0.15	0.14	0.12	
Total Energy From Grid	%	2.0%	2.1%	2.5%	2.2%	
Total Electrical Power Use	MWh	76,414	77,504	74,156	59,992	
Total Electrical Power Derived From Renewable	MWh	19,946	19,105	18,298	14,943	
Total Electrical Power Derived From Non-Renewable	MWh	56,469	58,399	55,857	45,049	
Total Electrical Power Use at Corporate	MWh	20,322	18,809	19,244	7,847	
Total Electrical Power Use at Operations/Field Sites	MWh	56,092	58,695	54,911	52,145	
Total Electrical Power Use From Renewable Sources at Corporate	MWh	5,182	4,796	4,907	2,001	
Total Electrical Power Use From Renewable Sources at Operations/Field Sites	MWh	14,763	14,309	13,391	12,942	
Total Electrical Power Intensity	kWH/BOE	0.70	0.87	0.99	0.74	

	Units	2023	2022	2021	2020	2019
Air Quality						
Nitrogen Oxide (NO _x) Emissions	metric tons	3,494	2,868	2,831	2,848	3,196
Sulfur Oxide (SO ₂) Emissions	metric tons	561	510	537	553	798
Volatile Organic Compounds (VOCs) Emissions	metric tons	2,802	3,068	2,080	2,236	2,368
Particulate Matter (PM ₁₀) Emissions	metric tons	208	217	222	265	307
Hazardous Air Pollutants (HAPs)	metric tons	245				
Onshore Operations Water Management						
Total Fresh Water Withdrawn	thousand cubic meters	2,155	1,180	1,284	2,396	5,268
Groundwater	thousand cubic meters	1,380	386	308	770	3,768
Municipal	thousand cubic meters	0	0	0	0	0
Surface Water	thousand cubic meters	775	794	975	1,626	1,500
Total Fresh Water Consumed	thousand cubic meters	1,949	1,258	1,105	1,810	5,151
Groundwater	thousand cubic meters	1,380	459	234	770	3,601
Municipal	thousand cubic meters	0	0	0	0	0
Surface Water	thousand cubic meters	569	800	871	1,040	1,550
Total Fresh Water Withdrawn in Regions With High or Extremely High Baseline Water Stress	%	30%	0%	0%	0%	0%
Total Fresh Water Consumed Intensity <i>Freshwater Consumed ÷ Number of Wells Completed in that Year</i>	thousand cubic meters per well completion	40	25	30	46	49
Number of Wells Completed in That Year	#	49	50	37	39	105
Total Water Consumed for Murphy Operations (Freshwater and Recycled Water)	thousand cubic meters	2,420	1,729	1,331	1,895	5,412
Produced Water Recycled for Murphy Operations	thousand cubic meters	472	471	226	85	261
Produced Water Recycled for Murphy Operations and Other Operators	thousand cubic meters	681	585	241	85	280
Total Recycled Water (Consumed by Murphy and Other Operators) of Total Water Consumed	%	28.0%	33.8%	18.1%	4.5%	5.2%
Volume of Produced Water and Flowback Generated	thousand cubic meters	1,710	1,535	1,592	932	1,887
Produced Water and Flowback Discharged	%	0%	0%	0%	0%	0%
Produced Water and Flowback Injected ⁴	%	65.3%	65.5%	83.5%	84.9%	84.4%
Produced Water and Flowback Recycled (Including Water Shared With Other Operators) ⁴	%	27.6%	38.1%	15.1%	9.1%	14.9%
Hydrocarbon Content in Discharged Water	metric tons	0	0	0	0	0
Hydraulically Fractured Wells for Which There Is Public Disclosure of All Fracturing Fluid Chemicals Used	%	100%	100%	100%	100%	100%
Hydraulic Fracturing Sites Where Ground or Surface Water Quality Deteriorated Compared to a Baseline	%	0%	0%	0%	0%	0%

⁴ Data may not add to 100% due to: calendar year of water generation versus use, evaporation and pond bottom levels.

	Units	2023	2022	2021	2020	2019
Offshore Operations Water Management						
Produced Water Discharged to Sea	thousand cubic meters	1,718	1,315	1,227	841	650
Hydrocarbon Concentration ⁵	mg/L	10.46	8.07	9.62	13.16	13.93
Hydrocarbon Content in Produced Water Discharged to Sea	metric tons	17.98	10.61	11.80	11.07	9.05
Waste Management						
Total Waste Generated (Solid and Semi-Solid)	metric tons	68,883	108,841	72,916	94,588	
Non-Hazardous Waste	metric tons	68,801	108,023	71,696	94,552	
Hazardous Waste ⁶	metric tons	82	818	1,220	36	
Non-Hazardous Waste						
Incinerated	metric tons	0				
Landfilled ⁷	metric tons	68,785				
Recycled	metric tons	16				
Spills, Biodiversity Impact, Critical Incident Risk Management and Other Metrics						
Hydrocarbon Spills (Same as Number of Hydrocarbon Spills) ⁸	#	4	0	0	4	1
Hydrocarbon Spills (Same as Aggregate Volume of Hydrocarbon Spills) ⁸	barrels	351	0	0	81	83
Volume of Hydrocarbon Spills in Arctic	barrels	0	0	0	0	0
Volume of Hydrocarbon Spills Near Shorelines With ESI Rankings 8-10	barrels	0	0	0	0	0
Volume Recovered	barrels	0	0	0	54	0
Proved Reserves in or Near Sites With Protected Conservation Status or Endangered Species Habitat (per SASB)	%	0.2%	0.7%	0.9%	1.0%	1.0%
Probable Reserves in or Near Sites With Protected Conservation Status or Endangered Species Habitat (per SASB)	%	N/A	N/A	N/A	N/A	N/A
Process Safety Events (PSE) for Loss of Primary Containment (LOPC) of Greater Consequence (Tier 1)	#	2	5	5	3	5
PSE Rates for LOPC of Greater Consequence (Tier 1)	per 200,000 work hours	0.06	0.14	0.20	0.12	0.10
Environmental Fines and Penalties (Operated)	\$ thousand	0	0	25	0	

⁵ US EPA regulatory limit is 29 mg/L.

⁶ Year-over-year change in hazardous waste generated is dependent on field activity, project type and characterization and classification.

⁷ Includes downhole disposal of liquids from semi-solids.

⁸ Spill event ≥ 1 BBL and outside of containment.

	Units	2023	2022	2021	2020	2019
Safety						
Fatality Rate, Employees + Contractors	per 200,000 work hours	0	0	0	0	0
Fatality Rate, Employees	per 200,000 work hours	0	0	0	0	0
Fatality Rate, Contractors	per 200,000 work hours	0	0	0	0	0
Total Recordable Incident Rate (TRIR), Employees and Contractors	per 200,000 work hours	0.28	0.37	0.28	0.28	0.52
TRIR, Employees	per 200,000 work hours	0.38	0.26	0.13	0.12	0.35
TRIR, Contractors	per 200,000 work hours	0.25	0.40	0.36	0.36	0.57
Near-Miss Frequency Rate, Employees and Contractors	per 200,000 work hours	0.78	1.16	1.30	2.14	1.40
Near-Miss Frequency Rate, Employees	per 200,000 work hours	1.50	1.53	1.54	2.34	1.50
Near-Miss Frequency Rate, Contractors	per 200,000 work hours	0.57	1.06	1.19	2.05	1.37
Lost Time Incident Rate (LTIR), Employees and Contractors	per 200,000 work hours	0.08	0.03	0.04	0.08	0.08
LTIR, Employees	per 200,000 work hours	0.25	0.13	0	0.12	0.09
LTIR, Contractors	per 200,000 work hours	0.04	0	0.06	0.06	0.08
Total Recordable Incidents, Employees and Contractors	#	10	13	7		
Total Recordable Incidents, Employees	#	3	2	1		
Total Recordable Incidents, Contractors	#	7	11	6		
Average Hours of Health, Safety and Emergency Response Training, Employees (Based on Total Employee Count as at Year-End)	per total number employees	14	17	6	15	14
Average Hours of Health, Safety and Emergency Response Training, Contractors (US-Based Only)	per total number contractors	15	22	19	13	18
Preventable Vehicle Incident Rate (Employee and US Onshore Only)	per million miles driven	2.11	2.21	1.72	1.24	1.43

Employee Diversity, Equity and Inclusion⁹

Employee Workforce Metrics						
Employee Count (Total Company)	#	725	691	696	675	823
Median Age	years	43	42	43	42	43
Employee Turnover (Voluntary)	%	6%	11%	6%	6%	10%
Representation of Women (US and International)						
Executive and Senior-Level Managers	%	21%	16%	12%	12%	14%
First- and Mid-Level Managers	%	22%	22%	18%	17%	22%
Professionals	%	33%	35%	34%	34%	34%
Other (Administrative Support and Field)	%	7%	5%	7%	7%	20%
Total	%	22%	21%	21%	21%	27%

⁹ The employee count reduction in 2020 is primarily driven by El Dorado, Arkansas, and Calgary, Canada, office closures.

	Units	2023	2022	2021	2020	2019
Representation of Minorities (US-Based Only)						
Executive and Senior-Level Managers	%	32%	26%	18%	12%	9%
First- and Mid-Level Managers	%	28%	26%	22%	23%	24%
Professionals	%	42%	39%	34%	33%	29%
Other (Administrative Support and Field)	%	30%	30%	31%	31%	36%
Total	%	35%	33%	30%	30%	29%

Employee Training

Average Training Time per Employee (Based on Total Employee Count as at Year-End)	hours	18	19			
Average Training Time per Office Employee	hours	12	9			
Average Training Time per Field Employee	hours	26	32			
Total Average Training Spend per Employee (Based on Total Employee Count as at Year-End)	\$	1,406	1,116			
Average Training Spend per Office Employee	\$	1,581	873			
Average Training Spend per Field Employee	\$	1,139	1,451			

Security, Human Rights, Rights of Indigenous People and Community Relations (per SASB)

Proved Reserves in or Near Areas of Conflict	%	0%	0%	0%	0%	0%
Probable Reserves in or Near Areas of Conflict	%	N/A	N/A	N/A	N/A	N/A
Proved Reserves in or Near Indigenous Land ¹⁰	%	0%	0%	0%	0%	0%
Probable Reserves in or Near Indigenous Land ¹⁰	%	N/A	N/A	N/A	N/A	N/A
Number of Non-Technical Delays	#	0	0	0	0	0
Duration of Non-Technical Delays	days	0	0	0	0	0

Reserves Valuation and Capital Expenditures

Amount Invested in Renewable Energy	\$	0	0	98,570	7,200	53,000
Revenue Generated by Renewable Energy Sales	\$	0	0	0	0	0

Business Ethics and Transparency

Proved Reserves in Countries That Have the 20 Lowest Rankings in Transparency International's Corruption Perception Index	%	0%	0%	0%	0%	0%
Probable Reserves in Countries That Have the 20 Lowest Rankings in Transparency International's Corruption Perception Index	%	N/A	N/A	N/A	N/A	N/A

¹⁰ Murphy identifies Indigenous lands as reserve lands held by the Crown. We do not have operational assets, surface or mineral rights within Indigenous lands, but we do operate within the traditional territory occupied by First Nations and by the Métis People.

Independent Limited Assurance Report to Murphy Oil Corporation

ERM Certification & Verification Services Incorporated ("ERM CVS") was engaged by Murphy Oil Corporation ("Murphy Oil") to provide limited assurance in relation to the selected information set out below and presented in Murphy Oil's 2024 Sustainability Report (the "Report").

Engagement Summary	
Scope of our assurance engagement	Whether the 2023 data for the following selected disclosures are fairly presented within the report, in all material respects, in accordance with the reporting criteria for assets under Murphy Oil's operational control:
	<ul style="list-style-type: none"> • Total Scope 1 GHG emissions [metric tons CO₂e] • Total Scope 2 GHG emissions (location-based method) [metric tons CO₂e] • Total Scope 1 Carbon dioxide (CO₂) emissions [metric tons CO₂e] • Total Scope 1 Methane (CH₄) emissions [metric tons CO₂e] • Total Scope 1 Nitrous oxide (N₂O) emissions [metric tons CO₂e] • Total GHG emissions (Scope 1 and Scope 2 by location-based method) [metric tons CO₂e] • CO₂e]
	Our assurance engagement does not extend to information in respect of earlier periods or to any other information included in the Report.
Reporting period	January 1, 2023 to December 31, 2023
Reporting criteria	<ul style="list-style-type: none"> • WRI/WBCSD's Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004, as updated in 2015) • US EPA Mandatory Greenhouse Gas Reporting Rule in effect during the reporting period • Murphy Oil's internal reporting criteria and definitions
Assurance standard and level of assurance	<p>We performed a limited assurance engagement, in accordance with the International Standard on Assurance Engagements ISAE 3000 (Revised) 'Assurance Engagements other than Audits or Reviews of Historical Financial Information' issued by the International Auditing and Assurance Standards Board.</p> <p>The procedures performed in a limited assurance engagement vary in nature and timing from and are less in extent than for a reasonable assurance engagement and consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.</p>
Respective responsibilities	<p>Murphy Oil is responsible for preparing the Report for the collection and presentation of the information within it and for the designing, implementing, and maintaining of internal controls relevant to the preparation and presentation of the selected information.</p> <p>ERM CVS' responsibility is to provide a conclusion to Murphy Oil on the agreed scope based on our engagement terms with Murphy Oil, the assurance activities performed, and exercise our professional judgment.</p>

Our conclusion

Based on our activities, as described below, nothing has come to our attention to indicate that the 2023 data and information for the disclosures listed under 'Scope' above are not fairly presented in the Report, in all material respects, in accordance with the reporting criteria.

Our assurance activities

Considering the level of assurance and our assessment of the risk of material misstatement of the selected information a multi-disciplinary team of sustainability and assurance specialists performed a range of procedures that included, but were not restricted to, the following:

- Evaluating the appropriateness of the reporting criteria for the selected information;
- Performing an analysis of the external environment, including a media search, to identify sustainability risks and issues in the reporting period that may be relevant to the assurance scope;
- Interviewing management representatives responsible for managing the selected issues;
- Interviewing relevant staff to understand and evaluate the management systems and processes (including internal review and control processes) used for collecting and reporting the selected disclosures;
- Obtaining an understanding of the procedures performed by the internal audit department;
- Reviewing a sample of qualitative and quantitative evidence supporting the reported information at the corporate level;
- Conducting an analytical review of the year-end data submitted by all locations included in the consolidated 2023 group data for the selected disclosures which included testing the completeness and mathematical accuracy of conversions and calculations, and consolidation in line with the stated reporting boundary;
- Performing in-person visit to Murphy Oil Houston to interview key stakeholders for US onshore and offshore assets (i.e., Eagle Ford Shale Karnes and King's Quay respectively) and review source data and local reporting systems and controls;
- Conducting a virtual visit to Murphy Oil's Kaybob Duvernay asset in Alberta, Canada to review source data and local reporting systems and controls;
- Evaluating the conversion and emission factors and assumptions used; and
- Reviewing the presentation of information relevant to the scope of our work in the Report to ensure consistency with our findings.

The limitations of our engagement

The reliability of the assured information is subject to inherent uncertainties, given the available methods for determining, calculating, or estimating the underlying information. It is important to understand our assurance conclusions in this context.

Our independence, integrity, and quality control

ERM CVS is an independent certification and verification body accredited by UKAS to ISO 17021:2015. Accordingly, we maintain a comprehensive system of quality control, including documented policies and procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements. Our quality management system is at least as demanding as the relevant sections of ISQM-1 and ISQM-2 (2022).

ERM CVS applies a Code of Conduct and related policies to ensure that its employees maintain integrity, objectivity, professional competence, and high ethical standards in their work. Our processes are designed and implemented to ensure that the work we undertake is objective, impartial, and free from bias and conflict of interest. Our certified management system covers independence and ethical requirements that are at least as demanding as the relevant sections of the IESBA Code relating to assurance engagements.

ERM CVS has extensive experience in conducting assurance on environmental, social, ethical, and health and safety information, systems, and processes, and provides no consultancy-related services to Murphy Oil in any respect.



Heather I. Moore, P.E.
Partner, Corporate Assurance
Malvern, PA

July 11, 2024

On behalf of:
ERM Certification & Verification Services Incorporated
www.ermcvs.com | post@ermcvs.com



API TEMPLATE 2.0 FOR GHG REPORTING

This voluntary Template is intended for individual company use. API will not be aggregating data reported by individual companies or compiling individual company reporting.

General						
Date:		July 31, 2024				
IPCC AR GWP:		AR4				
Basis:		Operational Control				
No.	Indicator		Units	2022	2023	Comments
1. Direct GHG Emissions (Scope 1)						
1.1	Direct GHG Emissions (Scope 1) – All GHGs		million metric tons CO ₂ e	1.06	1.08	
1.1.1	Upstream – All GHGs		million metric tons CO ₂ e	1.06	1.08	
1.1.1.1	CH ₄		million metric tons CO ₂ e	0.16	0.14	
1.1.1.2	Upstream Flaring (All GHGs; subset of Scope 1)		million metric tons CO ₂ e	0.22	0.24	
1.1.1.3	Volume of Flares		MMcf	2,473	2,805	
1.1.2	Midstream – All GHGs		million metric tons CO ₂ e	N/A	N/A	
1.1.2.1	CH ₄		million metric tons CO ₂ e	N/A	N/A	
1.1.3	Downstream – All GHGs		million metric tons CO ₂ e	N/A	N/A	
1.1.4	LNG – All GHGs		million metric tons CO ₂ e	N/A	N/A	
1.1.5	Oil and Natural Gas Field Services – All GHGs		million metric tons CO ₂ e	N/A	N/A	
2. Indirect GHG Emissions From Imported Energy (Scope 2)						
2.1	Indirect GHG Emissions From Imported Electricity + Heat + Steam + Cooling (Scope 2, Market-Based)		million metric tons CO ₂ e	0.03	0.03	Our Scope 2 utilizes location-based method
2.1.1	Upstream – All GHGs		million metric tons CO ₂ e	0.03	0.03	
2.1.2	Midstream – All GHGs		million metric tons CO ₂ e	N/A	N/A	
2.1.3	Downstream – All GHGs		million metric tons CO ₂ e	N/A	N/A	
2.1.4	LNG – All GHGs		million metric tons CO ₂ e	N/A	N/A	
2.1.5	Oil and Natural Gas Field Services – All GHGs		million metric tons CO ₂ e	N/A	N/A	
3. GHG Mitigation						
3.1	GHG Mitigation From Carbon Capture Utilization or Storage (CCUS) Credits, and Offsets		million metric tons CO ₂ e	N/A	N/A	
3.1.1	CCUS – All GHGs		million metric tons CO ₂ e	N/A	N/A	
3.1.2	Renewable Energy Credits – (RECs for Indirect Emissions) – All GHGs		million metric tons CO ₂ e	N/A	N/A	
3.1.3	Offsets – All GHGs		million metric tons CO ₂ e	N/A	N/A	

No.	Indicator	Units	2022	2023	Comments
4. Intensity - GHG Emissions					
4.1	Scope 1 + Scope 2 Upstream GHG Intensity	kilograms CO ₂ e/BOE	12.15	10.16	
4.2	Scope 1 Upstream Methane Intensity	kilograms CO ₂ e/BOE	1.69	1.25	
4.3	Scope 1 Upstream Flaring Intensity	kilograms CO ₂ e/BOE	2.51	2.15	
4.4	Scope 1 + Scope 2 Liquids Pipelines Transmission GHG Intensity	million metric tons CO ₂ e/throughput in barrel-miles	N/A	N/A	
4.5	Scope 1 Natural Gas Pipelines Transmission and Storage Methane Intensity	%	N/A	N/A	
4.6	Scope 1 + Scope 2 Downstream GHG Intensity	kilograms CO ₂ e/BOE	N/A	N/A	
4.7	Scope 1 + Scope 2 LNG GHG Intensity	million metric tons CO ₂ e/MMcf	N/A	N/A	
4.8	Additional Intensity Metrics, if applicable (e.g., further disaggregated by constituent GHG or by more granular business asset, and/or for additional business assets beyond these categories)	No			

5. Indirect GHG Emissions From Consumers' Use of Products (Scope 3)

Attention: Scope 3 emissions from the use of sold products are released when the hydrocarbons produced and marketed by natural gas and oil companies are combusted by consumers. GHG emissions from the use of sold products are not within a company's control, and it should be noted that not 100% of the hydrocarbon products produced/refined/sold by the company may be combusted at the end of the product lifecycle. Scope 3 emissions lead to extensive multiple counting of GHG emissions across the economy. Therefore, it is inaccurate to add together Scope 3 emissions reported by individual companies in order to ascertain GHG emissions from consumers' use of oil and natural gas products. For example, an oil and natural gas company's Scope 3 emissions represent Scope 1 and/or Scope 2 emissions for fuel consumers (e.g., electric utility combusting natural gas, individuals using gasoline, manufacturers purchasing natural gas to power their operations). Scope 3 emissions on an individual company basis are not an indicator whether global GHG emissions are being reduced and do not provide context of how GHG emissions fit within the global energy system. Scope 3 emissions are also not indicative of a company's strategy to manage potential climate risks and opportunities nor of a company's commercial strategy or viability.

5.1	Indirect GHG Emissions From Use of Sold Products (Category 11)	million metric tons CO ₂ e	21.90	24.30	Murphy Oil Corporation 2024 Sustainability Report, page 22
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6. Additional Climate-Related Targets and Reporting

6.1	GHG Reduction Target(s)	Yes			Murphy Oil Corporation 2024 Sustainability Report, page 14
6.2	TCFD-Informed reporting	Yes			Murphy Oil Corporation 2024 Sustainability Report, page 15
6.3	Additional Climate Reporting Resources				Murphy Oil Corporation 2024 Sustainability Report, Content Indices, page 94

7. Third-Party Verification

7.1	Assurance Level		Limited assurance engagement	Limited assurance engagement	Murphy Oil Corporation 2024 Sustainability Report, page 90
7.2	Assurance Provider		ERM CVS	ERM CVS	

CONTENT INDICES

Sustainability Accountability Standards Board (SASB)

Oil and Gas Exploration and Production Sustainability Accounting Standard (Version 2023-12)

Code	Metric	Location
Greenhouse Gas Emissions		
EM-EP-110a.1	Gross global Scope 1 emissions, percentage methane, percentage covered under emissions-limiting regulations	Page 84
EM-EP-110a.2	Amount of gross global Scope 1 emissions from: (1) flared hydrocarbons, (2) other combustion, (3) process emissions, (4) other vented emissions and (5) fugitive emissions	Page 84
EM-EP-110a.3	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	Page 16
Air Quality		
EM-EP-120a.1	Air emissions of the following pollutants: (1) NO _x (excluding N ₂ O), (2) SO _x , (3) volatile organic compounds (VOCs), and (4) particulate matter (PM ₁₀)	Pages: 20, 86
Water Management		
EM-EP-140a.1	(1) Total fresh water withdrawn, (2) total fresh water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	Pages: 33, 86
EM-EP-140a.2	Volume of produced water and flowback generated; percentage (1) discharged, (2) injected, (3) recycled; hydrocarbon content in discharged water	Pages: 33, 86
EM-EP-140a.3	Percentage of hydraulically fractured wells for which there is public disclosure of all fracturing fluid chemicals used	Pages: 47, 86
EM-EP-140a.4	Percentage of hydraulic fracturing sites where ground or surface water quality deteriorated compared to a baseline	Pages: 33, 46, 86
Biodiversity Impacts		
EM-EP-160a.1	Description of environmental management policies and practices for active sites	Page 41
EM-EP-160a.2	(1) Number and (2) aggregate volume of hydrocarbon spills, (3) volume in Arctic, (4) volume impacting shorelines with ESI rankings 8-10, and (5) volume recovered	Page 87
EM-EP-160a.3	Percentage of (1) proved and (2) probable reserves in or near sites with protected conservation status or endangered species habitat	Page 87

Code	Metric	Location
Security, Human Rights and Rights of Indigenous Peoples, and Community Relations		
EM-EP-210a.1	Percentage of (1) proved and (2) probable reserves in or near areas of conflict	Page 89
EM-EP-210a.2	Percentage of (1) proved and (2) probable reserves in or near Indigenous land	Page 89
EM-EP-210a.3	Discussion of engagement processes and due diligence practices with respect to human rights, Indigenous rights and operation in areas of conflict	Pages: 67, 68; Human Rights and Indigenous Rights Policies on website
EM-EP-210b.1	Discussion of process to manage risks and opportunities associated with community rights and interests	Pages: 66, 75
EM-EP-210b.2	(1) Number and (2) duration of nontechnical delays	Page 89
Workforce Health and Safety		
EM-EP-320a.1	(1) Total recordable incident rate (TRIR), (2) fatality rate, (3) near-miss frequency rate (NMFR), and (4) average hours of health, safety and emergency response training for (a) direct employees and (b) contract employees	Pages: 54, 88
EM-EP-320a.2	Discussion of management systems used to integrate a culture of safety throughout the exploration and production lifecycle	Page 51
Reserves Valuation and Capital Expenditures		
EM-EP-420a.1	Sensitivity of hydrocarbon reserve levels to future price projection scenarios that account for a price on carbon emissions	Page 27
EM-EP-420a.2	Estimated carbon dioxide emissions embedded in proved hydrocarbon reserves	—
EM-EP-420a.3	Amount invested in renewable energy, revenue generated by renewable energy sales	Page 89
EM-EP-420a.4	Discussion of how price and demand for hydrocarbons and/or climate regulation influence the capital expenditure strategy for exploration, acquisition and development of assets	Page 24
Business Ethics and Transparency		
EM-EP-510a.1	Percentage of (1) proved and (2) probable reserves in countries that have the 20 lowest rankings in Transparency International's Corruption Perception Index	Page 89
EM-EP-510a.2	Description of the management system for prevention of corruption and bribery throughout the value chain	Pages: 80-82; Code of Business Conduct and Ethics, Anti-Bribery and Corruption Policy and Supplier Code of Conduct on website

Code	Metric	Location
Management of the Legal and Regulatory Environment		
EM-EP-530a.1	Discussion of corporate positions related to government regulations or policy proposals that address environmental and social factors affecting the industry	Pages: 28, 66-68
Critical Incident Risk Management		
EM-EP-540a.1	Process Safety Event (PSE) rates for Loss of Primary Containment (LOPC) of greater consequence (Tier 1)	Page 87
EM-EP-540a.2	Description of management systems used to identify and mitigate catastrophic and tail-end risks	Pages: 44, 46-48, 51, 58
Activity Metric		
EM-EP-000.A	Production of: (1) oil, (2) natural gas, (3) synthetic oil and (4) synthetic gas	2023 SEC Form 10-K
EM-EP-000.B	Number of offshore sites	2023 SEC Form 10-K
EM-EP-000.C	Number of terrestrial sites	2023 SEC Form 10-K

Task Force on Climate-Related Financial Disclosures (TCFD)

Element	Disclosure	Location
Governance	Board's oversight of climate-related risks and opportunities	Page 23
	Management's role in assessing and managing climate-related risks and opportunities	Page 23
Strategy	Climate-related risks and opportunities the organization has identified over the short, medium and long term	Pages: 24-31
	Impact of climate-related risks and opportunities on the organization's businesses, strategy and financial planning	Pages: 24-31
	Resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario	Pages: 24-31
Risk Management	Organization's processes for identifying and assessing climate-related risks	Pages: 10, 28, 76
	Organization's processes for managing climate-related risks	Pages: 28, 76
	Processes for identifying, assessing and managing climate-related risks are integrated into the organization's overall risk management	Pages: 10, 28, 76
Metrics and Targets	Metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process	Page 32
	Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks	Pages: 14, 84
	Targets used by the organization to manage climate-related risks and opportunities and performance against targets	Page 32

IPIECA/API/IOGP Sustainability Reporting Guidance, 4th Edition, 2020

Indicator	Disclosure	Location
Governance and Business Ethics		
GOV-1	Governance approach	Pages: 2, 8, 9, 73; Corporate Governance on website
GOV-2	Management systems	Pages: 2, 8, 9, 51, 73; Corporate Governance on website
GOV-3	Preventing corruption	Pages: 80, 81; Corporate Governance and Supplier Code of Conduct on website
GOV-4	Transparency of payments to host governments	Page 81
GOV-5	Public advocacy and lobbying	Page 81

Climate Change and Energy		
CCE-1	Climate governance and strategy	Pages: 11, 23, 24; Climate Change Position on website
CCE-2	Climate risk and opportunities	Pages: 14, 28, 32, 76
CCE-3	Lower-carbon technology	Page 14
CCE-4	Greenhouse gas (GHG) emissions	Pages: 14, 84
CCE-5	Methane emissions	Pages: 17, 84
CCE-6	Energy use	Pages: 20, 85
CCE-7	Flared gas	Pages: 21, 85

Environment		
ENV-1	Freshwater	Pages: 33, 86
ENV-2	Discharges to water	Pages: 33, 86
ENV-3	Biodiversity policy and strategy	Page 41
ENV-4	Protected and priority areas for biodiversity conservation	Page 41
ENV-5	Emissions to air	Pages: 20, 86
ENV-6	Spills to the environment	Pages: 44, 46, 58, 87
ENV-7	Materials management	Pages: 33, 47, 49, 87
ENV-8	Decommissioning	Pages: 42, 47

Indicator	Disclosure	Location
Safety, Health and Security		
SHS-1	Safety, health and security engagement	Page 51
SHS-2	Workforce and community health	Pages: 53, 55, 62
SHS-3	Occupational injury and illness incidents	Pages: 51, 88
SHS-4	Transport safety	Pages: 55, 88
SHS-5	Product stewardship	As an upstream company, we ensure that we comply with local laws and regulations pertaining to communicating the risks of handling and transporting of our products. Page 47
SHS-6	Process safety	Pages: 44, 87
SHS-7	Security risk management	Pages: 58, 76, 77
Social		
SOC-1	Human rights due diligence	Pages: 67, 80; Human Rights Policy on website
SOC-2	Suppliers and human rights	Pages: 57, 67, 80, 81; Supplier Code of Conduct on website
SOC-3	Security and human rights	Page 67
SOC-4	Site-based labour practices and worker accommodation	Pages: 53, 57, 67, 80, 81
SOC-5	Workforce diversity and inclusion	Pages: 60, 88; EEO-1 Data on website
SOC-6	Workforce engagement	Pages: 64, 88
SOC-7	Workforce training and development	Pages: 62, 89
SOC-8	Workforce nonretaliation and grievance mechanisms	Page 80; Corporate Governance: Reporting of Concerns on website
SOC-9	Local community impacts and engagement	Pages: 65, 75
SOC-10	Indigenous peoples	Page 67
SOC-11	Land acquisition and involuntary resettlement	Not applicable
SOC-12	Community grievance mechanisms	Pages: 66, 68; Corporate Governance: Reporting of Concerns on website
SOC-13	Social investment	Page 68
SOC-14	Local procurement and supplier development	Pages: 66, 81
SOC-15	Local hiring practices	Pages: 62, 69

Global Reporting Initiative (GRI) Sector Standard for Oil and Gas 2021

Murphy Oil Corporation has reported the information cited in this GRI content index for the period January 1, 2023, to December 31, 2023, with reference to the GRI Standards.

Indicator	Disclosure	Location
GRI 1: Foundation 2021		
REQUIREMENT 7: PUBLISH A GRI CONTENT INDEX		
7-a-i	GRI content index	This index
REQUIREMENT 8: PROVIDE A STATEMENT OF USE		
8-a	Claims of reporting in accordance with the GRI Standards	Above
GRI 2: General Disclosures 2021		
Organization and Reporting Practices		
2-1 ORGANIZATIONAL DETAILS		
2-1-a	Legal name of the organization	Murphy Oil Corporation
2-1-b	Nature of ownership and legal form	The Company is a Delaware corporation, and its common stock is listed and traded on the NYSE under the ticker symbol "MUR"
2-1-c	Location of headquarters	9805 Katy Fwy, Suite G-200, Houston, Texas 77024
2-1-d	Countries of operation	United States, Canada, Australia, Brazil, Brunei, Côte d'Ivoire, Mexico, Vietnam
2-2 ENTITIES INCLUDED IN SUSTAINABILITY REPORTING		
2-2-a	Entities included in the consolidated financial statements	2023 SEC Form 10-K
2-2-b	Financial information filed on public record	2023 SEC Form 10-K
2-2-c	If organization consists of multiple entities, explain approach for consolidating information	Not applicable
2-3 REPORTING PERIOD, FREQUENCY AND CONTACT POINT		
2-3-a	Reporting period	Page 2; Unless otherwise stated, this report covers the period of Jan. 1 to Dec. 31, 2023.
2-3-b	Reporting cycle	Annual
2-3-c	Publication date	August 7, 2024
2-3-d	Contact point for questions regarding the report	sustainability@murphyoilcorp.com
2-4 RESTATEMENTS OF INFORMATION		
2-4-a	Restatements of information	Page 2
2-5 EXTERNAL ASSURANCE		
2-5-a	Policy for seeking external assurance	Page 2
2-5-b	If sustainability report has been externally assured	Page 90
Activities and Workers		
2-6 ACTIVITIES, VALUE CHAIN, AND OTHER BUSINESS RELATIONSHIPS		
2-6-a	Sector in which active	Oil and Gas Sector
2-6-b-i	Activities, products, services, scale and markets served	Murphy Oil Corporation is a global oil and natural gas exploration and production company, with both onshore and offshore operations and properties. 2023 SEC Form 10-K
2-6-b-ii	Supply chain	Page 81
2-6-b-iii	Entities downstream and their activities	Refining and marketing

Indicator	Disclosure	Location
2-6-c	Other relevant business relationships not part of value chain	None
2-6-d	Significant changes to the organization and its supply chain	None
2-7 EMPLOYEES		
2-7-a	Total number of employees by gender and region	Pages: 61, 88; EEO-1 Data on website
2-7-b	Permanent, temporary, non-guaranteed hours, full-time, and part-time employees by gender and region	Pages: 61, 88; EEO-1 Data on website
2-7-c	Methodologies and assumptions used to compile data	Page 61
2-7-d	Contextual information supporting 2-7-a and 2-7-b	Page 61
2-7-e	Significant fluctuations in the number of employees during and between the reporting periods	Page 61
Governance		
2-9 GOVERNANCE STRUCTURE AND COMPOSITION		
2-9-a	Governance structure	Pages: 11, 23; 2024 Proxy Statement
2-9-b	List committees of the highest governance body responsible for decision making on and overseeing the management of the organization's impacts on the economy, environment, and people	Page 23; 2024 Proxy Statement
2-9-c	Composition of the highest governance body and its committees	Page 74; 2024 Proxy Statement
2-10 NOMINATION AND SELECTION OF THE HIGHEST GOVERNANCE BODY		
2-10-a	Nomination and selection of the highest governance body	Page 11; 2024 Proxy Statement
2-10-b	Criteria used for nominating and selecting highest governance body members	Page 11; 2024 Proxy Statement
2-11 CHAIR OF THE HIGHEST GOVERNANCE BODY		
2-11-a	Chair of the highest governance body	Page 74; 2024 Proxy Statement
2-11-b	If chair is also a senior executive, explain their function within organizational management	Not applicable
2-12 ROLE OF THE HIGHEST GOVERNANCE BODY IN OVERSEEING THE MANAGEMENT OF IMPACTS		
2-12-a	Role of highest governance body in setting purpose, values, strategy, and policies	Pages: 11, 23; 2024 Proxy Statement
2-12-b	Identifying and managing economic, environmental, and social impacts	Pages: 10, 11, 23, 76
2-12-b	If the highest governance body engages with stakeholders to support these process and how it considers the outcomes	Page 10; 2024 Proxy Statement
2-12-c	Effectiveness and frequency of risk management processes	Pages: 11, 23, 76

Indicator	Disclosure	Location
2-13 DELEGATION OF RESPONSIBILITY FOR MANAGING IMPACTS		
2-13-a	Delegating authority	Pages: 11, 23
2-13-b	Executive-level responsibility for economic, environmental, and social topics	Pages: 11, 23; individual sections of report
2-14 ROLE OF THE HIGHEST GOVERNANCE BODY IN SUSTAINABILITY REPORTING		
2-14-a	Highest governance body's role in sustainability reporting	Health, Safety, Environment and Corporate Responsibility (HSE&CR) Board Committee; page 2; HSE&CR Board Committee Charter on website
2-14-b	If the highest governance body is not responsible, explain	Not applicable
2-15 CONFLICTS OF INTEREST		
2-15-a	Conflicts of interest	Page 80; Corporate Governance: Reporting of Concerns on website; 2024 Proxy Statement
2-15-b	If conflicts of interest are disclosed to stakeholders including: cross-board membership, cross-shareholding with suppliers or other stakeholders, existence of controlling shareholders, related parties, their relationships, transactions, and outstanding balances	2024 Proxy Statement
2-16 COMMUNICATION OF CRITICAL CONCERNs		
2-16-a	Communicating critical concerns	Pages: 11, 23; 2024 Proxy Statement
2-17 COLLECTIVE KNOWLEDGE OF THE HIGHEST GOVERNANCE BODY		
2-17-a	Collective knowledge of highest governance body	Page 74; 2024 Proxy Statement
2-18 EVALUATION OF THE PERFORMANCE OF THE HIGHEST GOVERNANCE BODY		
2-18-a	Evaluating the highest governance body's performance	2024 Proxy Statement
2-18-b	Reporting if evaluations are independent and frequency	2024 Proxy Statement
2-18-c	Actions taken in response to evaluations	2024 Proxy Statement
2-19 REMUNERATION POLICIES		
2-19-a	Remuneration policies	2024 Proxy Statement
2-19-b	Remuneration policies for members of the highest governance body and senior executives relate to their objectives and performance	2024 Proxy Statement
2-20 PROCESS TO DETERMINE REMUNERATION		
2-20-a	Process for determining remuneration	2024 Proxy Statement
2-20-b	Stakeholders' involvement in remuneration	2024 Proxy Statement
2-21 ANNUAL TOTAL COMPENSATION RATIO		
2-21-a	Annual total compensation ratio	2024 Proxy Statement
2-21-b	Percentage increase in annual total compensation ratio	2024 Proxy Statement
2-21-c	Contextual information supporting total compensation ratio	2024 Proxy Statement

Indicator	Disclosure	Location
Strategy, Policies and Practices		
2-22 STATEMENT ON SUSTAINABLE DEVELOPMENT STRATEGY		
2-22-a	Statement from senior decision-maker	Page 6
2-23 POLICY COMMITMENTS		
2-23-a	Precautionary Principle or approach	Pages: 9, 10, 14, 28, 34, 41, 44, 55
2-23-b	Values, principles, standards, and norms of behavior	Pages: 3, 67, 80
2-23-c	Links to policy commitments	Page 80
2-23-d	Level of approval for policy commitments	Page 80
2-23-e	Application of policy commitments to activities and business relationships	Page 80
2-23-f	Communication of policy commitments	Page 80
2-24 EMBEDDING POLICY COMMITMENTS		
2-23-a	Embedding, integration, and implementation of policy commitments	Page 80
2-25 PROCESSES TO REMEDIATE NEGATIVE IMPACTS		
2-25-a	Commitment for remediation of negative impacts	Page 41
2-25-b	Grievance mechanisms	Pages: 43, 66, 68
2-25-c	Other processes for remediation of negative impacts	Page 41
2-25-d	Stakeholders' involvement in grievance mechanisms	Page 68
2-25-e	Tracking effectiveness of grievance mechanisms	Page 68
2-26 MECHANISMS FOR SEEKING ADVICE AND RAISING CONCERNs		
2-26-a	Mechanisms for advice and concerns about ethics	Page 80; Corporate Governance: Reporting of Concerns on website
2-27 COMPLIANCE WITH LAWS AND REGULATIONS		
2-27-a	Non-compliance with environmental laws and regulations	Page 87
2-27-b	Total number and value of fines for instances of non-compliance with laws and regulations	Page 87
2-28 MEMBERSHIP ASSOCIATIONS		
2-28-a	Membership of associations	Page 81

Indicator	Disclosure	Location
Stakeholder Engagement		
2-29 APPROACH TO STAKEHOLDER ENGAGEMENT		
2-29-a	Approach to stakeholder engagement	Pages: 10, 75; 2024 Proxy Statement
2-29-a-i	Identifying and selecting stakeholders	Pages: 10, 75; 2024 Proxy Statement
2-29-a-ii,iii	Purpose and meaningful engagement of stakeholders	Pages: 10, 75; 2024 Proxy Statement
2-30 COLLECTIVE BARGAINING AGREEMENTS		
2-30-a	Percentage of total employees covered by collective bargaining agreements	We follow all laws in regards to a worker's ability to bargain as a group instead of individually. At this time, we do not have any unions.
2-30-b	Determination of working conditions and terms of employment for employees not covered by collective bargaining agreements	We follow all laws in regards to a worker's ability to bargain as a group instead of individually. At this time, we do not have any unions.
GRI 3: Material Topics 2021		
3-1 PROCESS TO DETERMINE MATERIAL TOPICS		
3-1-a	Defining report content and topic Boundaries	Pages: 2, 10
3-1-b	Stakeholders and experts informing the process to determine material topics	Pages: 2, 10
3-2 LIST OF MATERIAL TOPICS		
3-2-a	List of material topics	Page 10
3-2-b	Changes in reporting	None
3-3 MANAGEMENT OF MATERIAL TOPICS		
3-3-a	Actual and potential negative impacts	Page 10
3-3-b	Involvement with negative impacts through direct or indirect activities	Pages: 23, 28, 76
3-3-c	Policies or commitments regarding material topics	Pages: 23, 28, 76
3-3-d	Precautionary Principle or approach	Pages: 23, 28, 76
3-3-e	Tracking effectiveness of actions taken	Pages: 23, 28, 76
3-3-f	How stakeholder engagement has informed actions	Page 75
GRI 11: Oil and Gas Sector 2021		
SECTOR PROFILE		
	Sector activities and business relationships	Murphy Oil Corporation is a global oil and natural gas exploration and production company, with both onshore and offshore operations and properties.
	Sector and sustainable development	Pages: 9, 24

Indicator	Disclosure	Location
GRI 11.1: GHG Emissions		
11.1.1	Management of material topics	Page 14
11.1.2	Energy consumption within the organization	Page 85
11.1.4	Energy intensity	Page 85
11.1.5	Direct (Scope 1) GHG emissions	Pages: 14, 84
11.1.6	Energy indirect (Scope 2) GHG emissions	Pages: 14, 84
11.1.7	Other indirect (Scope 3) GHG emissions	Pages: 14, 84
11.1.8	GHG emissions intensity	Pages: 14, 85
GRI 11.2: Climate Adaptation, Resilience, and Transition		
11.2.1	Management of material topics	Page 14
11.2.2	Financial implications and other risks and opportunities due to climate change	2023 SEC Form 10-K
11.2.3	Reduction of GHG emissions	Pages: 14, 84
11.2.4	Approach to public policy development and lobbying on climate change	Pages: 14, 84
GRI 11.3: Air Emissions		
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GRI 11.4: Biodiversity		
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11.4.2	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Pages: 41, 87
11.4.3	Significant impacts of activities, products, and services on biodiversity	Pages: 41, 87
11.4.4	Habitats protected or restored	Pages: 41, 87
11.4.5	IUCN Red List species and national conservation list species with habitats in areas affected by operations	Pages: 41, 87
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Indicator	Disclosure	Location
GRI 11.6: Water and Effluents		
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11.6.2	Interactions with water as a shared resource	Pages: 33, 86
11.6.3	Management of water discharge-related impacts	Pages: 33, 86
11.6.4	Water withdrawal	Pages: 33, 86
11.6.5	Water discharge	Pages: 33, 86
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GRI 11.7: Closure and Rehabilitation		
11.7.1	Management of material topics	Page 41
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11.7.3	Programs for upgrading employee skills and transition assistance programs	Page 62
11.7.4	Operational sites with closure and rehabilitation plans in place and closures	Pages: 42, 47
11.7.5	Decommissioned structures left in place and rationale	Pages: 42, 47
11.7.6	Total monetary value of financial provisions for closure and rehabilitation made by the organization, including, post-closure monitoring and aftercare for operational sites	Pages: 42, 47; 2023 SEC Form 10-K
GRI 11.8: Asset Integrity and Critical Incident Management		
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11.8.2	Significant spills	Pages: 44, 87
11.8.3	Total number of Tier 1 and Tier 2 process safety events by business activity	Pages: 45, 87
11.8.4	Additional sector disclosures for oil sands mining operations	Not applicable
GRI 11.9: Occupational Health and Safety		
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11.9.2	Occupational health and safety management system	Page 53
11.9.3	Hazard identification, risk assessment, and incident investigation	Pages: 44, 54, 55
11.9.4	Occupational health services	Page 57
11.9.5	Worker participation, consultation, and communication on occupational health and safety	Pages: 55, 57, 58
11.9.6	Worker training on occupational health and safety	Pages: 55, 57, 58
11.9.7	Promotion of worker health	Page 62
11.9.8	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Pages: 44, 55; Protecting Our People: HSE Policy on website
11.9.9	Workers covered by an occupational health and safety management system	Page 53
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Indicator	Disclosure	Location
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11.10.2	New employee hires and employee turnover	Pages: 64, 88
11.10.3	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Page 62
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11.10.6	Average hours of training per year per employee	Pages: 62, 89
11.10.7	Programs for upgrading employee skills and transition assistance programs	Page 62
11.10.8	New suppliers that were screened using social criteria	Page 81
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GRI 11.11: Non-discrimination and Equal Opportunity		
11.11.1	Management of material topics	Page 59
11.11.2	Proportion of senior management hired from the local community	Page 69
11.11.3	Parental leave	Page 62
11.11.4	Average hours of training per year per employee	Pages: 62, 89
11.11.5	Diversity of governance bodies and employees	Pages: 60, 74, 88; EEO-1 Data on website; 2024 Proxy Statement
11.11.6	Ratio of basic salary and remuneration	2024 Proxy Statement
11.11.7	Incidents of discrimination and corrective actions taken	Page 80
GRI 11.12: Forced Labor and Modern Slavery		
11.12.1	Management of material topics	Human Rights Policy on website
11.12.2	Operations and suppliers at significant risk for incidents of forced or compulsory labor	Pages: 67, 81; Supplier Code of Conduct on website
11.12.3	New suppliers that were screened using social criteria	Pages: 67, 81; Supplier Code of Conduct on website

Indicator	Disclosure	Location
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11.13.1	Management of material topics	Human Rights Policy on website
11.13.2	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Page 67
GRI 11.14: Economic Impacts		
11.14.1	Management of material topics	2023 SEC Form 10-K
11.14.2	Direct economic value generated and distributed	2023 SEC Form 10-K
11.14.5	Significant indirect economic impacts	Page 69
GRI 11.15: Local Communities		
11.15.1	Management of material topics	Page 65
11.15.2	Operations with local community engagement, impact assessments and development programs	Page 65
11.15.3	Operations with significant actual and potential negative impacts on local communities	Page 66
GRI 11.16: Land and Resource Rights		
11.16.1	Management of material topics	Human Rights Policy and Indigenous Rights Policy on website
11.16.2	Location of operations that caused or contributed to involuntary resettlement or where such resettlement is ongoing. For each location, describe how peoples' livelihoods and human rights were affected and restored	Not applicable
GRI 11.17: Rights of Indigenous Peoples		
11.17.1	Management of material topics	Indigenous Rights Policy on website
11.17.3	Location of operations where indigenous peoples are present or affected by activities of the organization	Pages: 43, 66, 67
11.17.4	Report if the organization has been involved in a process of seeking free, prior and informed consent (FPIC) from indigenous peoples for any of the organization's activities, including, in each case: whether the process has been mutually accepted by the organization and the affected indigenous peoples; whether an agreement has been reached, and if so, if the agreement is publicly available	Pages: 43, 66, 67; Indigenous Rights Policy on website
GRI 11.18: Conflict and Security		
11.18.1	Management of material topics	Human Rights Policy and Supplier Code of Conduct on website
11.18.2	Security personnel trained in human rights policies or procedures	Page 67; Human Rights Policy and Supplier Code of Conduct on website
GRI 11.19: Anti-competitive Behavior		
11.19.1	Management of material topics: anti-competitive behavior	Page 80; Corporate Governance on website
11.19.2	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	Page 80

Indicator	Disclosure	Location
GRI 11.20: Anti-corruption		
11.20.1	Management of material topics	Anti-Bribery and Corruption Policy on website
11.20.2	Operations assessed for risks related to corruption	Pages: 67, 80 ,81, Anti-Bribery and Corruption Policy on website
11.20.3	Communication and training about anti-corruption policies and procedures	Pages: 67, 80 ,81, Anti-Bribery and Corruption Policy on website
11.20.5	Approach to contract transparency	Pages: 57, 80 ,81
11.20.6	List the organization's beneficial owners and explain how the organization identifies the beneficial owners of business partners, including joint ventures and suppliers	Page 75
GRI 11.21: Payments to Governments		
11.21.1	Management of material topics	2023 SEC Form 10-K
11.21.2	Direct economic value generated and distributed	2023 SEC Form 10-K
11.21.4	Approach to tax	2023 SEC Form 10-K
11.21.5	Tax governance, control, and risk management	Pages: 10, 28, 76
11.21.6	Stakeholder engagement and management of concerns related to tax	Page 75; 2023 SEC Form 10-K
11.21.7	Country-by-country reporting	2023 SEC Form 10-K
11.21.8	For oil and gas purchased from the state, or from third parties appointed by the state to sell on their behalf, report	2023 SEC Form 10-K
GRI 11.22: Public Policy		
11.22.1	Management of material topics	Corporate Governance on website
11.22.2	Political contributions	Page 81

United Nations Sustainable Development Goals

Goal		Location
Goal 1	End poverty in all its forms everywhere	Page 65
Goal 2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture	Page 65
Goal 3	Ensure healthy lives and promote well-being for all at all ages	Pages: 14, 51, 62, 65
Goal 4	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Pages: 62, 65
Goal 5	Achieve gender equality and empower all women and girls	Pages: 60, 62, 65
Goal 6	Ensure availability and sustainable management of water and sanitation for all	Pages: 33-40, 44-46, 58, 49-50
Goal 7	Ensure access to affordable, reliable, sustainable and modern energy for all	Page 14; Climate Change Position on website
Goal 8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Pages: 62, 65, 81
Goal 9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Page 65
Goal 10	Reduce inequality within and among countries	Not applicable
Goal 11	Make cities and human settlements inclusive, safe, resilient and sustainable	Not applicable
Goal 12	Responsible consumption and production – ensure sustainable consumption and production patterns	Pages: 14, 33, 41, 44, 46-49, 81
Goal 13	Take urgent action to combat climate change and its impacts	Pages: 14, 33; Climate Change Position on website
Goal 14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	Pages: 33, 44, 49, 58
Goal 15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	Pages: 33, 41, 44
Goal 16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	Pages: 80, 81
Goal 17	Strengthen the means of implementation and revitalize the global partnership for sustainable development	2024 Sustainability Report, multiple sections on industry collaboration and partnerships

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This report contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are generally identified through the inclusion of words such as "aim", "anticipate", "believe", "drive", "estimate", "expect", "expressed confidence", "forecast", "future", "goal", "guidance", "intend", "may", "objective", "outlook", "plan", "position", "potential", "project", "seek", "should", "strategy", "target", "will" or variations of such words and other similar expressions. These statements, which express management's current views concerning future events, results and plans, are subject to inherent risks, uncertainties and assumptions (many of which are beyond the Company's control) and are not guarantees of performance. In particular, statements, express or implied, concerning the Company's future operating results or activities and returns or the Company's ability and decisions to replace or increase reserves, increase production, generate returns, reduce or otherwise control operating costs and expenditures, generate cash flows, pay down or refinance indebtedness, achieve, reach or otherwise meet initiatives, plans, goals, ambitions or targets with respect to emissions, safety matters or other ESG (environmental/social/governance) matters, make capital expenditures and other capital allocation decisions are forward-looking statements.

Readers should not place undue reliance on forward-looking statements, which speak only as of the date such statements were first made. Except to the extent required by law, the Company undertakes no obligation to update or revise its forward-looking statements. Forward-looking statements involve risks and uncertainties that could cause actual results to differ materially from those projected, anticipated, or implied. Although it is not possible to predict or identify all such risks and uncertainties, they include, but are not limited to, the factors described under "Forward-Looking Statements" and "Risk Factors" in the Company's most recent Annual Report on Form 10-K and Quarterly Report on Form 10-Q filed with the SEC.

This report covers only the Company's business and does not address the performance or operations of our suppliers, contractors or partners. Statements regarding our environmental, social and governance (ESG) goals, targets and commitments are aspirational and may also be based on estimates and assumptions

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OUR PURPOSE

We believe in providing energy that empowers people.

OUR MISSION

We challenge the norm, tap into our strong legacy and use our foresight and financial discipline to deliver inspired energy solutions.

OUR VISION

We see a future where we are an industry leader who is positively impacting lives for the next 100 years and beyond.

OUR BEHAVIORS

Do Right Always

- Respect people, safety, environment and the law
- Follow through on commitments
- Share openly and accurately
- Make it better

Stay With It

- Show resilience
- Lean into challenges
- Support each other
- Consider the implications

Think Beyond Possible

- Offer solutions
- Step up and lead
- Don't settle for "good enough"
- Embrace new opportunities