



PERMIAN STRONG. WEST TEXAS PROUD.

PIONEER
NATURAL RESOURCES

2022 CLIMATE RISK REPORT

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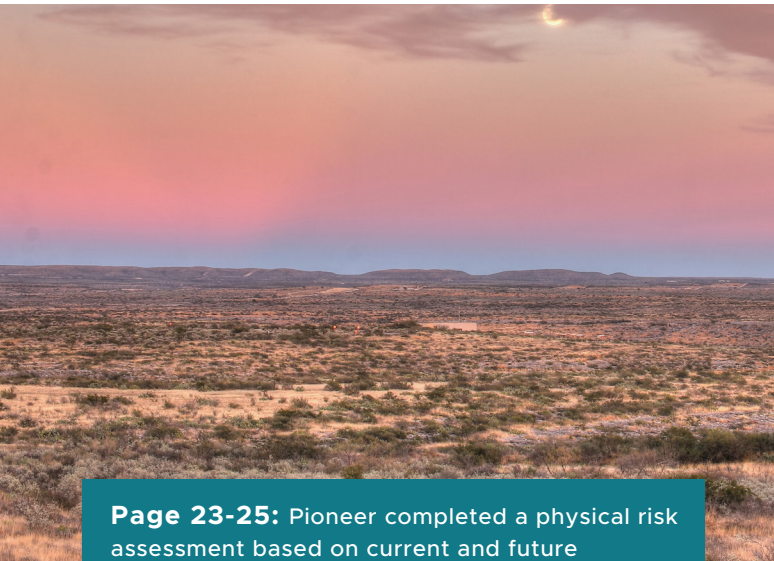
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About this Report

This Climate Risk Report increases the transparency of Pioneer’s progress toward integrating climate-related risks and opportunities into our governance structure, business strategy and planning processes, and risk management practice. The report is structured in accordance with the four core elements of the Task Force on Climate-related Financial Disclosures (TCFD): **Governance**, **Strategy**, **Risk Management**, and **Metrics and Targets**.

Pioneer believes the TCFD recommendations are an important step toward establishing a widely accepted framework for climate-related financial risk disclosure that should allow companies to be assessed on a comparable and consistent basis. Pioneer understands the importance of communicating climate resiliency to stakeholders and believes that utilizing the TCFD framework will enhance our long-term business strategy and outlook.



GOVERNANCE

This section describes our governance structure, including the role of the Board of Directors and executive management in identifying, assessing and mitigating climate-related risks and opportunities



RISK MANAGEMENT

This section explains the processes used to identify, assess and manage climate-related risks and opportunities and Pioneer’s assessment of the most relevant climate-related risks and opportunities



STRATEGY

This section outlines our planning time horizons, how climate risk and opportunities are integrated into our planning strategy processes, and our climate-related scenario analysis and business resiliency



METRICS AND TARGETS

This section describes the company’s climate-related targets and provides the data used to assess performance

Chapter 1

Message from the Chairman of the Board

In 2021, Pioneer published its inaugural Climate Risk Report (CRR), highlighting the resiliency of the company's business strategy during the energy transition. The company is pleased to provide an updated report on its continued progress in advancing the company's low-cost, low-emission strategy. As part of this effort, Pioneer continues to strive to manage climate risks, actively pursue emerging energy transition opportunities, and significantly reduce our greenhouse gas (GHG) emissions intensity (including methane intensity), all while striving to supply the world with responsibly sourced and reliable energy.

Pioneer recognizes the importance of the energy transition to address the threats of climate change. As the company wrote in last year's report, Pioneer continues to recognize the importance of providing accessible, reliable, low-cost, low-emission oil and gas that can be used to enhance and improve the well-being and economic development of communities around the world. The increase in energy demand following the decline of COVID-19 — combined with the impact of Russia's condemnable invasion of Ukraine — is refocusing the world on energy supply constraints and the importance of energy security. In a relatively short period of time, world leaders have awakened to an immediate risk (and potential crisis) in supplying the basic necessities of human life: food and energy. In a time when the world faces an undersupply of resources and significant inflation, the need for low-cost, responsibly sourced energy has been brought into sharp focus.

These significant shifts in the global landscape, following so quickly on the heels of the pandemic, underscore the continued importance of Pioneer's strategy. As one of America's leading energy companies, Pioneer is uniquely positioned to provide the world with secure, low-cost, low-emission oil and gas from our world-class Permian Basin assets, while concurrently pursuing its ambition to reduce Scope 1 and Scope 2 GHG emissions to net zero by 2050. Pioneer continues to maintain one of the lowest energy breakeven costs in the world, along with a low CO₂ intensity (per barrel equivalent). This is a critical combination when considering the importance of addressing the need for responsible and secure sources of low-cost energy.

As the company publishes its 2022 report, Pioneer's commitments are magnified in importance due to the events of the past year. In a volatile time, where the impacts of climate change might be overshadowed by the global events of the moment, the principles set forth by the Task Force on Climate-related Financial Disclosures (TCFD) become even more salient. TCFD sets out a framework to assess the climate resiliency of corporate business strategies over the short-, medium-, and long-term given various physical and transition risks. While the foundational elements of TCFD remain known and evergreen, the framework also calls for continuous improvement of internal processes.

Pioneer takes this commitment to continuous improvement very seriously.

In 2021, the company established, through various third-party sources, that Pioneer's Permian Basin position is a top-tier asset, with low-cost, low-emission resources that are expected to compete on the world stage through a variety of different scenarios for decades to come.



This year, Pioneer set out to both enhance its external validation, while also improving its internal modeling. As part of this process, the company engaged with a third-party expert to verify its GHG emissions data. At the same time, the company engaged with multiple parties throughout the year, including leading environmental non-government organizations, peer companies and financial institutions, to assess common strategies, environmental standards and disclosures to improve the long-term investment framework for U.S. independent oil and gas companies. Listed below are several examples to illustrate Pioneer’s commitment to enhancing its TCFD implementation and its continuous improvement efforts over the past year:

In 2021, Pioneer joined a group of banking institutions, investment firms, non-government organizations (NGOs) and other leading independent exploration and production companies to identify the key elements of an investable net zero transition framework for the U.S. oil and gas industry. Ceres, a nonprofit organization committed



to transforming the economy to build a sustainable future, facilitated this U.S. E&P Net Zero Principles Roundtable. Active participation and open dialogue with stakeholders is beneficial for supporting the critical role that the oil and gas industry has in supplying reliable and responsible energy to the world while also addressing the energy transition.

Additionally, Pioneer is establishing an investment strategy to capitalize on opportunities arising from the energy transition. The company has partnered with select firms that have experience in evaluating and executing alternative energy investments. Pioneer seeks to advance the energy transition by funding early-stage companies and piloting emerging technologies aimed at reducing emissions and improving energy efficiencies. Pioneer’s recent activities have been focused on working with third parties to develop wind and solar renewable energy on the company’s surface land that can be used in its field operations. The renewable energy certificates from these projects are expected to mitigate Pioneer’s Scope 2 emissions and enhance its ability to achieve its emissions targets and its ultimate ambition to reach net zero emissions from its operations. Additional future investments are being considered in carbon offset generation; battery storage; carbon capture, utilization and storage (CCUS); and hydrogen production. We believe these investments position Pioneer to participate in the next generation of low-carbon solutions and help pave the way to a responsible, sustainable energy transition.

Contemporaneous with the publication of this report, Pioneer announced its involvement with the development and completion of two renewable energy projects to supply lower cost, renewable power to the grid and to our Permian Basin operations. One project, a 140-megawatt wind energy project, is being developed in partnership with NextEra on Pioneer’s surface acreage. Pioneer will also participate in renewable energy sourced from the recent 160-megawatt Concho Valley solar project and is evaluating other opportunities to leverage its extensive surface acreage position to

add more renewable energy. The renewable energy certificates from these projects are expected to provide an offset to Pioneer’s Scope 2 emissions. As a result, these projects will enhance Pioneer’s use of renewable energy and its ability to achieve its emissions targets and its ultimate ambition to reach net zero emissions from its operations.

Pioneer also provided other important highlights that were in the company’s Sustainability Report released earlier this year:



Continued progress toward emission reduction targets—

Following the successful integration of two acquisitions in 2021, Pioneer invested capital to bring the acquired assets in line with the company’s environmental targets. With these assets included in Pioneer’s 2021 reported metrics, the company has achieved a 22% reduction in greenhouse gas emissions intensity and a 50% reduction in methane emissions intensity from its 2019 baseline. ERM Certification and Verification Services Inc. (ERM CVS) provided limited assurance of Pioneer’s 2021 GHG emissions (Scope 1 and Scope 2) and flaring data. Additional information on the scope of this assurance can be found in the company’s Sustainability Report.



Joined the Oil and Gas Methane Partnership (OGMP) 2.0 Initiative—

Pioneer joined OGMP 2.0, which is considered the gold standard on methane emission measurement and reporting for the upstream energy industry. Pioneer is focused on increasing transparency in its methane reporting and measurement, combined with having industry-leading environmental standards throughout its operations.



Accelerated zero routine flaring target —

Pioneer plans to end routine flaring by 2025, five years earlier than the company’s previous 2030 target. This commitment is in accordance with World Bank standards and demonstrates Pioneer’s focus on environmental stewardship.



Continued Board refreshment —

Pioneer has appointed three new directors to the company’s Board with combined expertise in DEI, ESG and alternative energy, in addition to outstanding business experience. The recent appointments of Lori Billingsley, Maria Dreyfus and Jacinto Hernandez have expanded the diverse backgrounds of the company’s Board.

Pioneer is proud to be celebrating its 25th anniversary in 2022 as a leading U.S. independent oil and gas producer. The company’s Board and Management Committee are dedicated to improving the capabilities of the organization and to continuing to be an energy leader for the next 25 years.

Pioneer views this report as an important tool to highlight its progress in navigating the energy transition and regularly test the company’s long-term strategy. As we discussed last year, the company expects this report to evolve over time and enable its stakeholders to understand the impacts of the energy transition and climate change on Pioneer’s business. Despite the rapid change in the energy industry, Pioneer continues to believe that its strategy, governance, operational efficiency, capital discipline and best-in-

class portfolio position Pioneer to meet both the opportunities and challenges of the foreseeable future, as well as the expectations of shareholders and other stakeholders. The company’s low-cost, low-emission oil and gas production, combined with a strong balance sheet, positions Pioneer to continue as a leading American energy provider. Pioneer’s governance, scenario-planning and risk-management processes will continue to enhance the viability of the company in the decades to come.

Thank you for your continued interest in Pioneer and our ESG and climate-related initiatives.

J. Kenneth Thompson
Chairman of the Board of Directors



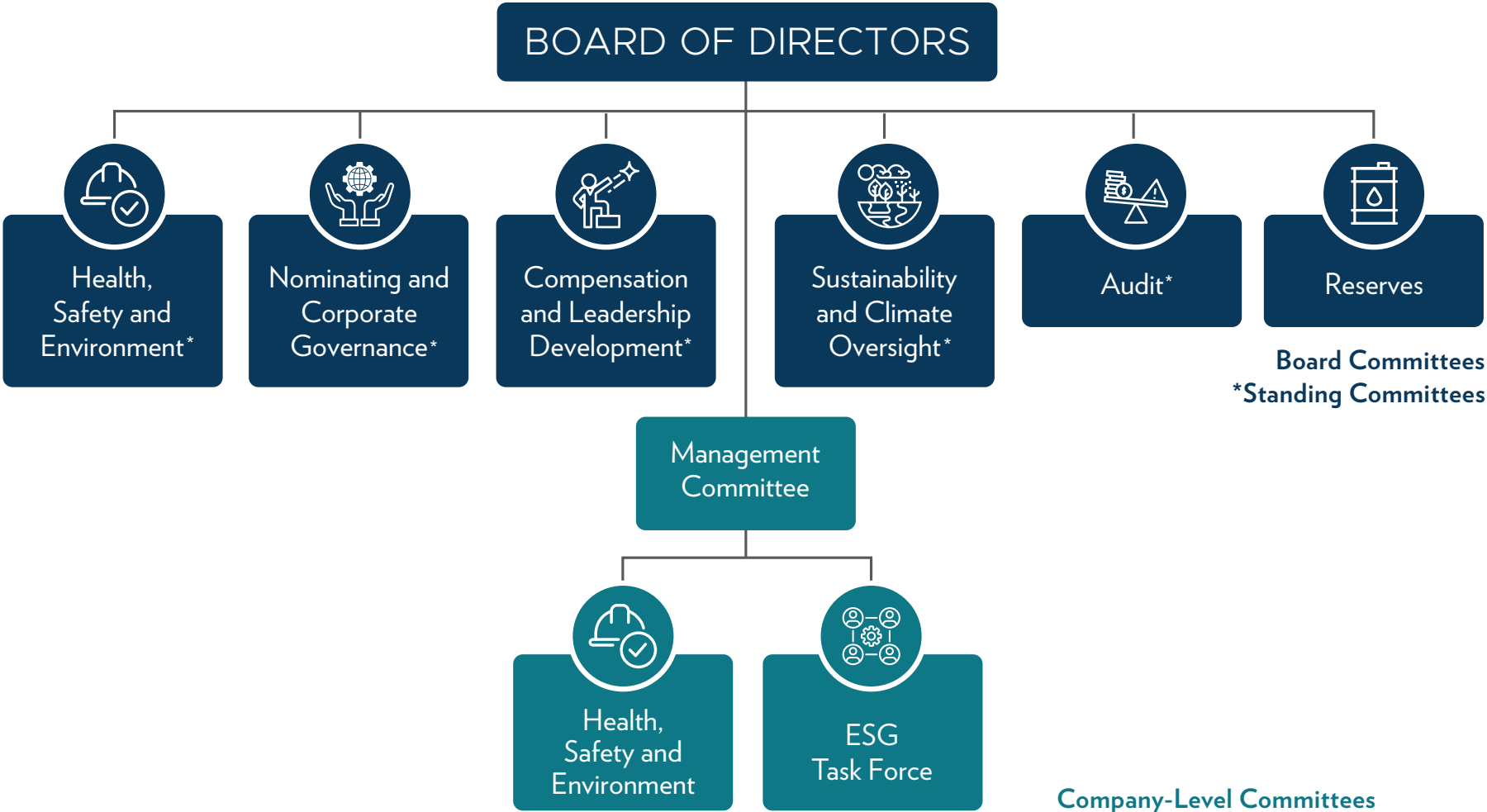
Chapter 2

Governance

Pioneer’s Board and Management Committee recognize that strong corporate governance drives alignment with the long-term interests of our stakeholders and strengthens our culture, provides accountability and ensures the sustainability of our organization.

Pioneer leadership believes consideration of climate-related risks and opportunities should be integrated into our policies, processes and culture. As a company, we employ an integrated approach to managing climate-related risks and opportunities to better inform decisions and implement business strategies that are reviewed against climate impacts across short-, medium- and long-term time horizons.

Pioneer Corporate Governance practices and policies are described in our *Corporate Governance Guidelines*, *Proxy Statement* and *Sustainability Report*.



Board of Directors

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The Board remains apprised of the latest climate issues by periodically participating in discussions with management and outside experts on a variety of oil and gas supply-and-demand scenarios, climate change and energy transition topics. Continuing director education is an important part of our Governance process and is provided via two primary avenues: (i) during regularly scheduled Board and Committee meetings and (ii) during specifically scheduled director education sessions. Education provided during regularly scheduled Board and Committee meetings focuses on topics that assist the Board in discharging its duties, including updates on specific matters covered by each Committee and periodic site visits. Director education sessions generally focus on topics that are of interest to Pioneer and

its stakeholders. For example, in 2021, director education sessions focused on areas related to the energy transition, alternative energy technologies, carbon emission offset markets, ESG and other relevant topics. Additionally, directors and members of executive management regularly engage with shareholders and other stakeholders on various issues (including ESG and climate) to solicit feedback on Pioneer’s corporate governance, sustainability and environmental programs. The Board recognizes the value of regularly conducting external outreach to ensure a variety of perspectives are considered. It is this balance of diversity, experience and external engagement that we believe enables Pioneer’s Board to effectively provide oversight of the company’s climate-related risks and opportunities.

Additional detail on our directors’ qualifications and recent actions resulting from Pioneer’s external engagement process can be found in the latest *Proxy Statement*, *Sustainability Report* and on [PXD.com > Culture > Governance](#).

Board Committees

In addition to its oversight of climate-related sustainability issues, the Board has delegated the oversight of specific climate-related risks to each of the Board’s standing committees.

Sustainability and Climate Oversight Committee (SCOC)

The SCOC is responsible for the oversight of the company’s climate strategy as well as overseeing Pioneer’s annual Sustainability Report and Climate Risk Report publications. The Chairman of the Board leads the committee, whose membership includes the chairpersons of the Board’s other four standing committees and directors with experience in ESG and in the energy transition. The committee meets regularly with leaders and employees to provide oversight and strategic direction to those responsible for managing and implementing targets, goals, actions and reporting related to sustainability and climate matters.



From left to right: Jacinto Hernandez, A.R. Alameddine, Phillip Gobe, Matthew Gallagher, Stacy Methvin, Phoebe Wood, Royce Mitchell, J. Kenneth Thompson, Scott Sheffield, Edison Buchanan, Maria Jelescu Dreyfus, Lori George Billingsley and Frank Risch.

Health, Safety and Environment (HSE) Committee

The HSE Committee oversees the company’s management of current and emerging HSE and climate change-related issues and trends in legislation, as well as proposed regulations affecting the company. This committee is also responsible for establishing, and monitoring, with input from the Management Committee, certain environmental and climate-related targets, such as emissions-intensity reduction targets.

Nominating and Corporate Governance Committee

The Nominating and Corporate Governance Committee considers whether Board governance, structures and processes are in place to appropriately address oversight of significant social, governance, public policy trends, issues and concerns, and other sustainability and corporate responsibility matters that could affect Pioneer’s business and reputation, including climate-related risks and opportunities.

Compensation and Leadership Development Committee

The Compensation and Leadership Development Committee is responsible for aligning executive compensation with company performance, including the incorporation of climate-related goals established by the HSE Committee, such as emissions-intensity and freshwater use reduction targets.

Audit Committee

The Audit Committee assists the Board with overseeing financial and accounting risks, reporting processes, policies and practices, controls, and audits, as defined in the committee charter. As the disclosure of climate-related data is further regulated, the Audit Committee will oversee the controls implemented at the company to address such disclosures.

Reserves Committee

The Reserves Committee is responsible for the Board’s oversight of the proved reserves estimates process. The committee meets with Pioneer executives and employees responsible for overseeing the company’s proved reserves estimates prior to the company’s Annual Report on Form 10-K being filed with the Securities and Exchange Commission.

Executive Management

Pioneer’s Management Committee, which includes the Chief Executive Officer and 12 additional members, is responsible for establishing and executing the company’s climate-related strategy, assessing climate-related risks and opportunities, and establishing and tracking climate-related targets, all of which are overseen by the Board. The Management Committee remains apprised of the latest climate issues by reviewing internal climate-related research and participating in climate-related discussions with Pioneer subject matter experts and outside experts on a variety of oil and gas supply-and-demand scenarios and energy-transition topics.

With oversight from the Board, the Management Committee establishes annual targets and goals and routinely assesses performance, including measurement of progress against the company’s climate-related targets and goals. Through Pioneer’s annual incentive program, Management Committee members have financial incentives related to emission-reduction targets and other climate-related improvement objectives.

Starting in 2022, Pioneer revised executive leadership’s annual cash bonus incentive program to adjust the annual incentive compensation weighting for ESG and HSE metrics to 15% and 5%, respectively.

During annual goal setting, management, with input and approval from the Board, defines measures of attainment for each goal to objectively evaluate performance. This proactive, incentive-based approach focuses the organization on key climate-related goals to achieve Pioneer objectives and targets.



The Management Committee has established two multidisciplinary sustainability groups to assist with the tactical aspects of strategy development and operational execution of climate-related initiatives: the ESG Task Force and the HSE Committee (HSEC).

ESG Task Force

Established in 2020, the ESG Task Force is comprised of a subset of the Management Committee, officers and key leaders from various disciplines across the company. Pioneer’s ESG Task Force is responsible for shaping our long-term ESG strategy and overseeing Pioneer’s corporate ESG goals and related reporting. The ESG Task Force ensures resources are available and provides strategic direction and expert advice.

ESG Task Force meetings occur monthly or as needed. The priority of the ESG Task Force is assessing, developing and progressing the following goals that are expected to align Pioneer’s ESG standards with stakeholder feedback and industry-leading practices, including:

- Increasing Board ESG oversight and engagement
- Moving forward with the company’s long-term net zero ambition, complemented by interim emissions-intensity targets for GHGs and methane, flaring intensity and freshwater use
- Aligning Pioneer risk management and decision-making processes with voluntary reporting frameworks, including TCFD and Sustainability Accounting Standards Board (SASB) principles
- Driving strategic and operational activities that position Pioneer to meet its long-term ESG continuous improvement targets, including DEI goals
- Confirming the accuracy of data collection and reporting of key ESG measures, particularly for GHG emissions (and its constituent parts), including emissions-target performance tracking
- Sanctioning a third-party audit to provide emissions and intensities data assurance
- Progressing Supply Chain performance review of contractors, suppliers and service-providers related to ESG and human rights

- Commissioning, completing and auditing the Sustainability Report and Climate Risk Report

Pioneer conducts internal audit reviews of the reports to ensure subject matter experts in each department provide adequate supporting documentation that substantiates the information disclosed in its Sustainability and Climate Risk reports. A comprehensive analysis of each audit is presented to the ESG Task Force, Audit Committee and the SCOC at the end of the reporting cycles.

Executive HSE Committee (HSEC)

Pioneer’s HSEC sets the company’s HSE vision and strategy for our operations. Executive leadership incorporates ESG objectives into annual HSE goal-setting sessions for all operational business units, and tracks and reports progress to the Management Committee and the Board HSE Committee. Executive, technical and field staff participate in the cross-functional HSEC. The Committee convenes monthly to manage HSE issues, regulatory compliance and related opportunities, providing quarterly updates to the Board HSE Committee. The development and implementation of HSEC initiatives lie with seven subcommittees that work to enhance our HSE programs:

1. *Incident Management*– assesses and recommends improvements to the incident management process, including reporting, investigation, root-cause analysis and corrective action development
2. *Contractor HSE*– manages our contractor engagement strategy for HSE culture improvement
3. *Safe Driving*– enhances the effectiveness of our safe-driving program to reduce motor vehicle risk
4. *Proactive HSE*– develops and promotes opportunities in proactive HSE processes
5. *Air Emissions*– identifies and implements air emission-reduction projects
6. *Spills and Waste Management*– identifies and implements spill- and waste-reduction projects

7. *Management of Change*– provides a common platform to carefully evaluate, manage and communicate HSE- and project-execution risks before implementing a change

Pioneer’s Serious Exposure program focuses on identifying and investigating any incident or near miss that had the potential to result in a fatality or life-altering/life-threatening injury or illness – and Pioneer also includes incidents that result in a significant environmental impact. This ensures we prioritize the highest-risk events, bringing increased visibility and proactive, consistent solutions to these more urgent situations.



Chapter 3

Strategy

The global energy landscape is undergoing a transformational shift to a lower-carbon future. While the direction of the energy transition is clear, recent global events have complicated the precise pathway and timeframe this transition will take.

The Russia-Ukraine conflict has exacerbated existing energy shortfalls and shifted international focus away from the energy transition and towards energy security, as nations combat the inflationary effects of supply chains disrupted by the global pandemic. Historical under-investment in finding and developing new energy sources, including low-carbon sources, has led to rising energy prices around the globe, pushing developed and developing nations alike to fall back on higher-emission intensity energy sources like coal. To overcome these challenges, there is a clear need for reliable and responsibly developed energy sources in the U.S. and abroad.

Pioneer seeks to meet this need by providing low-cost, responsibly sourced energy to the world. Pioneer's business strategy is to be the lowest-cost U.S. shale oil and gas producer with the lowest emissions intensity. We are proactively managing climate-related risks by employing leading operational practices, deploying emissions-reduction solutions, collaborating with companies throughout our value chain and investing in emerging technologies to enable Pioneer to thrive during the energy transition.

These recent market shifts highlight the importance of conducting scenario planning to ensure that Pioneer's capital investment decisions are made after evaluating a variety of future scenarios and under various commodity price environments. As our internal processes mature, Pioneer seeks to build on last year's TCFD scenario analysis, further incorporating climate-related considerations into our existing processes, business strategy, decision-making and culture. Key enhancements to this year's report include:

- Implementation of a \$50 per tonne CO₂e internal carbon price on Scope 1 and Scope 2 emissions in our capital investment decision process and standardize the evaluation of carbon reduction initiatives throughout the company (*Metrics and Targets*)
- Reporting results of our physical risk assessment that was targeted at determining the physical climate risk exposure of our asset position over a variety of risk perils, using varying climate scenarios over multiple time horizons (*Risk Management*)
- Refining our energy transition investment strategy that seeks to advance energy technologies through direct investment and partnerships with select, ESG-focused funds

Pioneer's approach to strategic planning is designed to enable better decision-making throughout the energy transition, while positioning the company to deliver long-term shareholder value through the responsible deployment of capital and talent.

Integrating Climate Into Strategy and Planning Processes

Pioneer leverages a robust strategic planning process divided into short-, medium-, and long-term perspectives. These timeframes allow for future action plans to be prioritized and aligned around a cohesive strategy that includes:

- Maintaining a strong balance sheet and financial flexibility
- Returning free cash flow to shareholders via a stable and growing base dividend, a variable dividend and share repurchases
- Utilizing the company’s scale and technology advancements to reduce costs, improve efficiency and create value
- Delivering profitable production and reserve growth through drilling, completion and production improvement activities
- Setting high expectations for employees and contractors to perform their jobs in a safe and environmentally responsible manner
- Maintaining industry-leading sustainable development and environmental stewardship efforts that mitigate climate change risks
- Adopting leading governance and employee engagement practices, including embracing diversity and inclusion and supporting the communities in which we live and operate
- Partnering with suppliers that are committed to maintaining their environmental stewardship efforts
- Leveraging private equity and venture capital partnerships that focus on carbon emissions reduction, efficiency improvements and the energy transition

Planning Time Horizons

We utilize the following short-, medium- and long-term time frames for our risk assessment and strategy and planning processes:

SHORT-TERM (0–3 YEARS)

Driven by our near-term operational budgeting and planning schedule

MEDIUM-TERM (3–10 YEARS)

Aligns with the timeframe of our strategic and financial planning process

LONG-TERM (10+ YEARS)

Reflects a variety of supply and demand scenarios underpinned by broader changes to the macro environment, such as potential structural changes to supply and demand fundamentals, technology advancements and emerging trends

Short-term Strategy (0–3 years)

Pioneer’s approach to budgeting and planning utilizes a bottom-up methodology, with detailed scheduling of activity on a well-by-well basis. Over many years, we have built a variety of in-house tools and leveraged external software to provide visibility into an operationalized three- to five-year development plan. This capability allows Pioneer to forecast drilling, completion, facility, gathering, processing, power, water and other infrastructure requirements to mitigate GHG emissions, as well as takeaway and other constraints on a location-specific basis. This also enables us to assess potential risks to execution and capital efficiency, allowing the company to select the most economically efficient and operationally feasible drilling locations. Ample flexibility is then afforded for scheduling changes driven by operational or acute risks (e.g., extreme weather events, infrastructure availability and supply chain constraints) and efficiency improvements. Additional examples of short-term planning that mitigates emissions risks include Pioneer refraining from placing a

well on production without necessary infrastructure in place to allow gas to be gathered, processed and flow to sales points. The company also employs robust leak detection and mitigation practices, like flying over our acreage footprint in search of leaks, allowing us to identify fugitive emissions as soon as possible. Finally, the company’s annual planning processes includes associated capital and resources necessary to achieve our emissions reduction targets through a combination of: (i) electrification of operations to reduce CO2 emissions, (ii) improvement of production and gathering facilities and leak detection technologies to reduce methane leaks, venting and flaring and (iii) use of renewable power generation to reduce Scope 2 emissions.

Other near-term considerations include the potential for abrupt policy risks associated with changes in environmental standards. As described in our *Sustainability Report*, Pioneer is focused on striving to meet best-in-class environmental stewardship and empowers our team to thoughtfully invest in a development program that meets the company’s standards in efficiency as well as environmental focus and safety.

As standards are modified by federal or state regulators, we are confident that our track record and operational philosophy will allow the company to meet or exceed regulatory requirements, while leading the industry in environmental practices. For example, we have been a consistent leader in advocating for the federal regulation of methane emissions during the Obama and Biden administrations and opposing the rollback of methane emissions regulations that was proposed by the Trump administration. In addition, we have supported the Texas Railroad Commission’s work to limit flaring and have designed our facilities to reflect this leadership position. Finally, we engage with prominent non-governmental organizations (NGOs) and others, including OGMP and Ceres, to jointly define key performance indicators in the near-term for leading sustainability practices for exploration and production companies.

Medium-term Strategy (3-10 years)

Early in 2020, Pioneer established an internal scenario planning process whereby an extensive list of forces affecting Pioneer and the broader energy industry over the next decade were compiled and ranked in terms of impact and uncertainty (i.e., oil supply and demand; potential regulatory changes, including adoption of carbon abatement regulations; and the pace of the energy transition). These forces were identified in a collaborative working session that included a cross-functional team and the Management Committee, with regular reporting to the Board. These scenarios were then used to develop four distinct future states with each scenario including several medium-term climate-related risks (**Risk Management**).

To inform Pioneer's future world view, the company continues to monitor key leading indicators associated with these scenarios, which are shared on a case-by-case basis with the the Board and the Management Committee. Through this process, Pioneer seeks to stress-test our business strategy and identify opportunities to improve the resiliency of the business over a medium-term timeframe.

Examples of these improvements include our focus on reducing GHG emissions and freshwater use through electrification of our field operations and enhanced recycling of produced water. This is leading to an increase in our future electricity consumption and associated electric infrastructure investment in the Permian Basin, initially supporting the conversion of drilling rigs, completions fleets and well compression from natural gas to electric. While increased field electrification increases the company's Scope 2 emissions, Pioneer is focused on enhancing its electricity supply with renewable power to reduce these emissions.

Additionally, in conjunction with the medium-term strategy review process, the company conducts a financial impact assessment by stress testing our corporate 10-year financial model under a variety of climate scenarios, further detailed below. The result of this medium-term financial impact assessment is presented to both the Board and the Management Committee, and a summary of that analysis is provided in this report.

Long-term Strategy (10+ years)

On an annual basis, Pioneer conducts a long-term strategy review, with active involvement from the Board and the Management Committee. We compare a variety of well-recognized long-term energy scenarios published by government agencies, large energy companies and research firms. We select a subset of scenarios that we believe best represent the range of potential outcomes and utilize the assumptions from each of the selected scenarios to stress-test Pioneer's full inventory development model, resulting in net asset value (NAV), resource and inventory impact assessments. Additionally, Pioneer leverages external experts, such as research, private equity and venture capital firms, to gain insights on how the ever-changing energy landscape may impact our scenario and strategic planning process.

Pioneer's scenario and strategic planning process is not designed to predict a given outcome. Instead, the process is intended to test the company's strategic plan in a variety of future scenarios and identify opportunities to improve the resiliency of the business.

In 2022, Pioneer also developed a series of long-term models to understand the inventory resiliency and growth of the Permian Basin as a whole, worldwide oil demand and even physical climate risks in the Permian Basin (in collaboration with a third-party analysis). Building these foundational models provides for a better understanding of the potential risks and opportunities to an asset that is geographically concentrated and oil centric.

Climate Scenario Analysis and Resiliency Assessment

Pioneer's strategic planning process for the medium- to long-term future leverages a combination of internal proprietary scenarios in conjunction with expert analysis to assess potential implications to our business model. The scenarios reported below are from the International Energy Agency's (IEA) World Energy Outlook (WEO) 2021, which examine a wide range of future pathways including consumer behavior, supply-and-demand and related commodity and carbon pricing.

Since 1993, the IEA has provided medium- to long-term energy projections using the World Energy Model (WEM)—a large-scale simulation model designed to replicate how energy markets function. The WEM is the principal tool used to generate detailed sector-by-sector and region-by-region projections for the WEO scenarios. While 2022 IEA scenarios were not updated before the completion of the company's scenario analysis described in this report, Pioneer expects to update the scenario analysis in 2023 with IEA's updated 2022 projections.

Additionally, Pioneer engages private commodity market research firms that provide industry outlooks and economic projections, which are used to test management's assumptions of future business conditions. These tools are leveraged to assess potential impacts on global fossil fuel demand and our long-term business prospects, including key aspects of climate-related risks and opportunities.



Scenario Planning

The following scenarios were used for the purposes of the financial impact assessment summarized in this report. These scenarios reflect a production growth rate and cost structure that aligns to our publicly stated guidance and sustainability goals.

Pioneer Base Case (PXD Base)

The Pioneer Base Case assumes a Brent oil price of \$55 per barrel and NYMEX gas price of \$2.50 per one million British Thermal Units (MMBTUs). The premise behind this scenario is supported by the view that oil and gas will remain a significant long-term source of global energy. This case is more conservative than current global pricing as we seek to ensure our investments are resilient even in a volatile pricing environment. Additionally, the Base Case includes Pioneer’s internal carbon price of \$50 per tonne CO₂e. Pioneer’s assets are in the Permian Basin of West Texas and therefore not currently subject to a regulated carbon price. Nevertheless, Pioneer is implementing an internal carbon price on Scope 1 and Scope 2 emissions to aid investment decisions amid possible future changes in carbon regulations.

Pioneer Market Case (PXD Market)

In 2022, Pioneer established a Market Case that assumes a Brent oil price of \$70 per barrel and NYMEX gas price of \$4 per one MMBTU that better reflects current commodity prices. This scenario is built on the premise that current trends of energy undersupply, inflation and lack of cohesive global emissions policies continue. The Market Case also includes Pioneer’s internal carbon price of \$50 per tonne CO₂e.

IEA Stated Policies (STEPS)

The STEPS scenario provides a scenario that reflects the direction in which today’s policy ambitions would likely take the energy sector. The scenario, published in October 2021, only considers the specific policy initiatives announced to date, leading to a long-term temperature rise of 2.7°C in 2100. Per the IEA, in STEPS, global coal demand declines between 2019 and 2040, while oil and natural gas demand grow 7% and 29%, respectively. Fossil fuels also make up 54% of the international energy mix in 2040, supporting forecasted global spending by the oil and gas industry of about \$600 billion annually.

STEPS Key Assumptions:

- Carbon-free electricity or energy targets in 20 U.S. states by 2050
- 25% of China’s energy mix comes from non-fossil sources by 2030
- 60% of total installed capacity in India being renewables by 2030
- Coal phase-out in 16 EU member states and strengthening offshore wind targets

IEA Sustainable Development (SDS)

The SDS scenario maps out a way to meet sustainable energy goals in full, requiring rapid and widespread changes across all parts of the energy system. This scenario charts a path to keep global warming to 1.8°C without relying on global net negative CO₂ emissions. It is fully aligned with the Paris Agreement to limit the rise in global temperatures to well below 2°C, while pursuing efforts to limit it to 1.5°C. The SDS is the most used scenario across the oil and gas industry to assess long-term resiliency. In the SDS, investment continues in the oil and gas industry, albeit reduced to \$390 billion annually from the \$600 billion level in STEPS. While overall energy demand will decline in the SDS, hydrocarbon demand will still account for 46% of the energy mix which, according to the IEA, “creates a need for new upstream projects, even in rapid energy transition” (Attribution: 2020 World Energy Model, page 21).

SDS Key Assumptions:

- Universal access to electricity and clean cooking by 2030
- Staggered introduction of global carbon prices
- Net zero emissions requirements for all new buildings by 2030
- Enhanced emissions intensity limits on vehicles
- Aviation fuel intensity reduced by 3% per year

IEA Net Zero (NZE50)

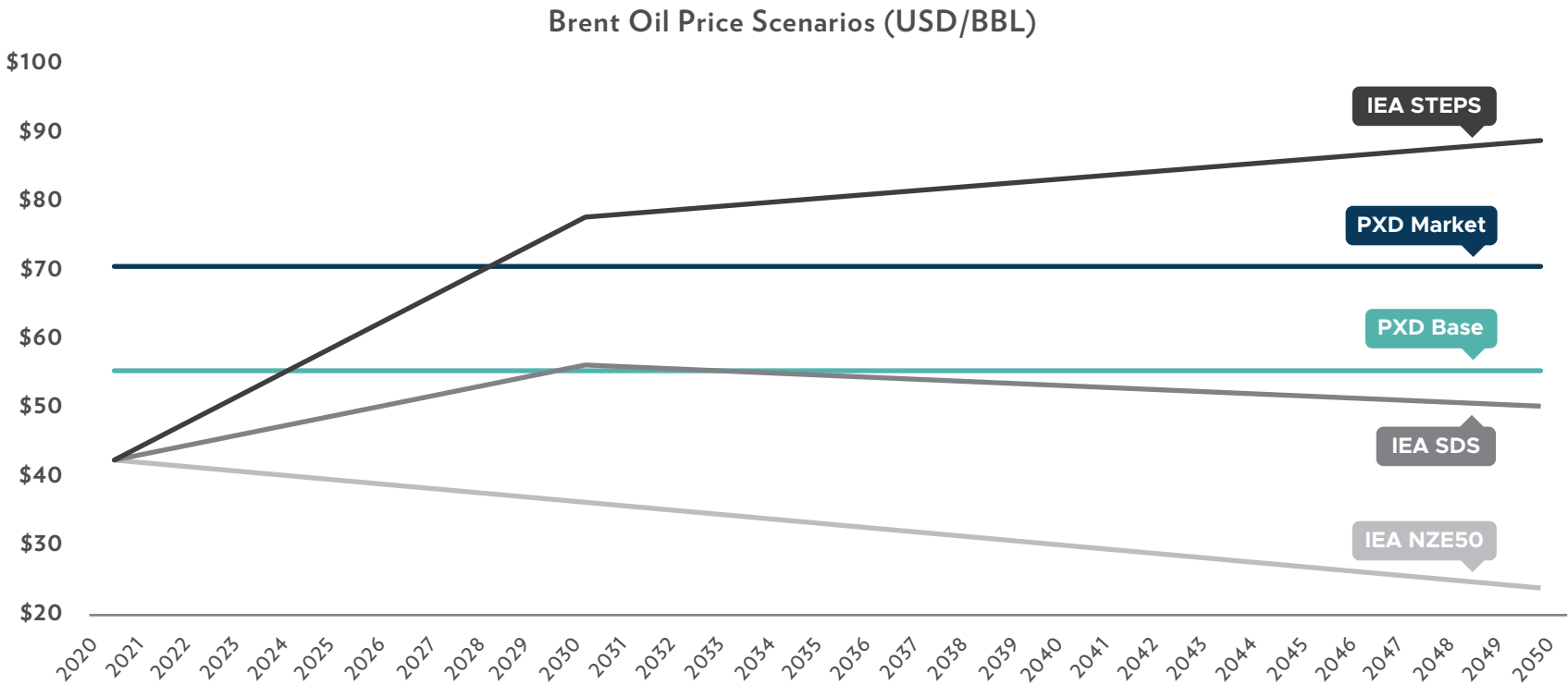
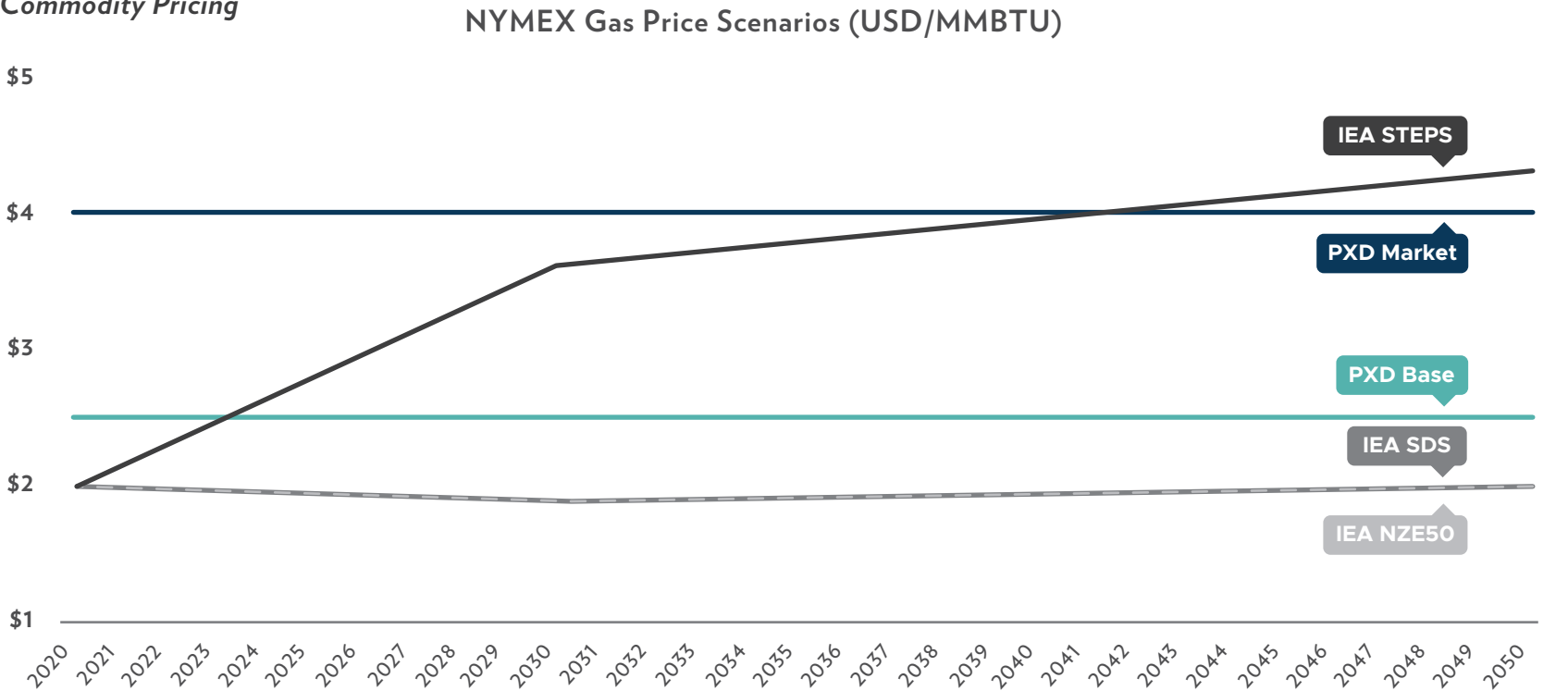
The NZE50 scenario examines what additional measures would be needed beyond SDS over the next 10 years to put global CO2 emissions on a pathway to net zero emissions by 2050. It is in line with the pathways used by the Intergovernmental Panel on Climate Change for the Special Report on Global Warming of 1.5°C (IPCC SR1.5). According to the IEA, the primary goal of the NZE50 scenario is to inform policy makers, as they have the greatest capability to move the world closer to its climate goals, and commitments made to date fall significantly short of what is required by the net zero pathway.

NZE50 Key Assumptions:

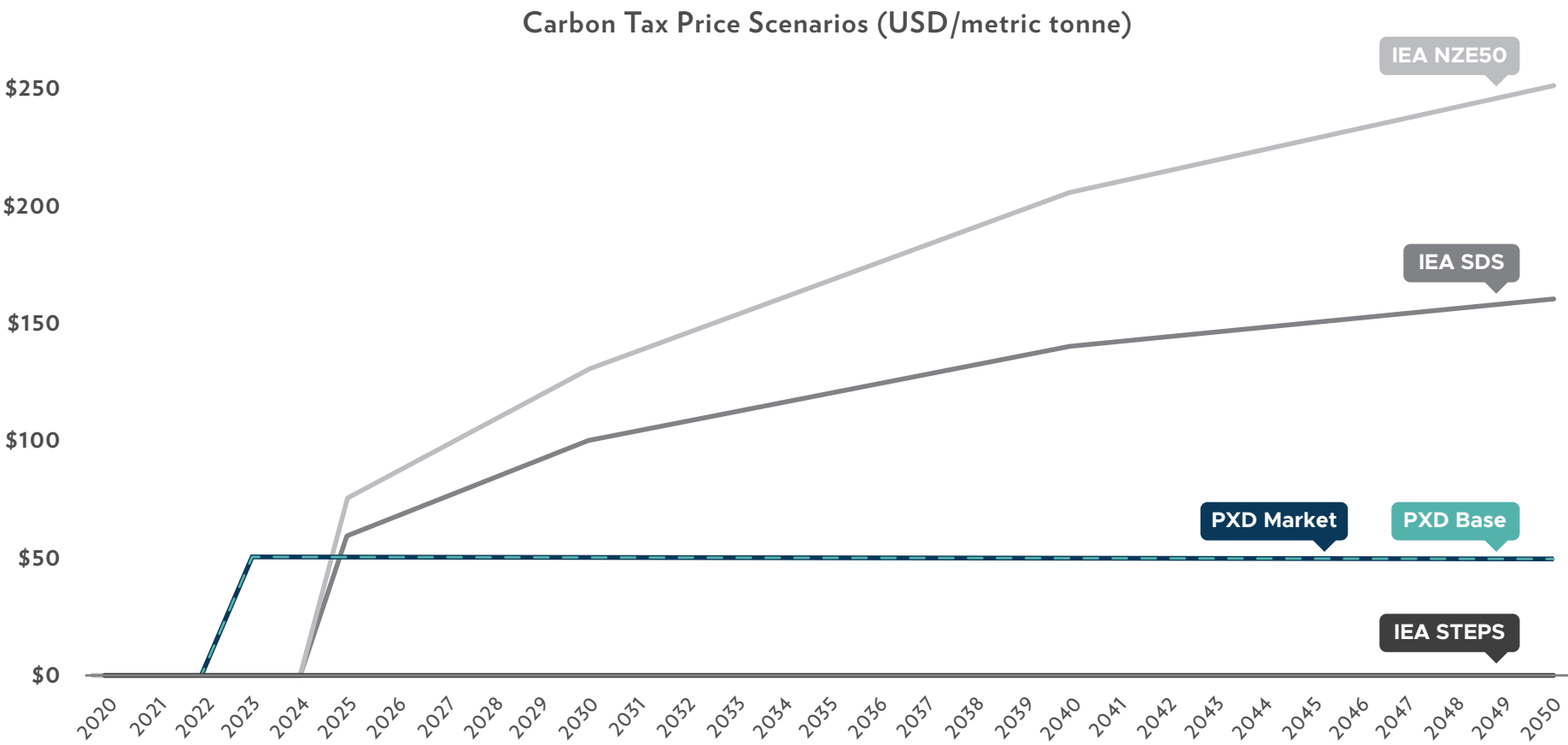
- No new coal mines or oil and gas fields approved for development
- 60% of global car sales are electric vehicles by 2030
- 50% of global aviation fuels are low emissions by 2040
- 70% of global electricity generation is from solar and wind by 2050

While the SDS showcases the importance of oil and gas investment for the global energy system, the NZE50 forecasts a decline in oil and gas demand on an absolute basis from 2019 levels to 2030. Even though oil and gas continue to satisfy a significant portion of energy demand in multiple sectors (especially transport and industrial uses), NZE50 paints a challenging picture for the oil and gas industry through low-commodity and high-carbon prices.

Commodity Pricing



Carbon Pricing



Results of Scenario Planning

Pioneer leveraged the selected scenarios above to assess the resiliency of our business model and key financial metrics. We disclose the impact to revenue, EBITDAX per BOE, net debt, and net asset value (NAV) relative to Pioneer’s Base Case. We believe these metrics give a holistic picture of Pioneer’s inventory longevity and long-term financial health in a wide range of possible oil, gas and carbon pricing environments. The table on the right highlights key observations from this work.

Impact Compared to Base Case Scenario

The largest effect to these financial metrics is associated with commodity pricing. Pioneer maintains a conservative Base Case of \$55 per barrel as we seek to test our investments against shifting

Impact Compared To Base Case Scenario

	10-Year Average			
	Revenue	EBITDAX/BOE	Net Debt	NAV
PXD Market	Positive Impact	Positive Impact	Positive Impact	Positive Impact
IEA STEPS	Positive Impact	Positive Impact	Positive Impact	Positive Impact
IEA SDS	Negligible Impact	Negative Impact	Negative Impact	Negative Impact
IEA NZE50	Negative Impact	Negative Impact	Negative Impact	Negative Impact

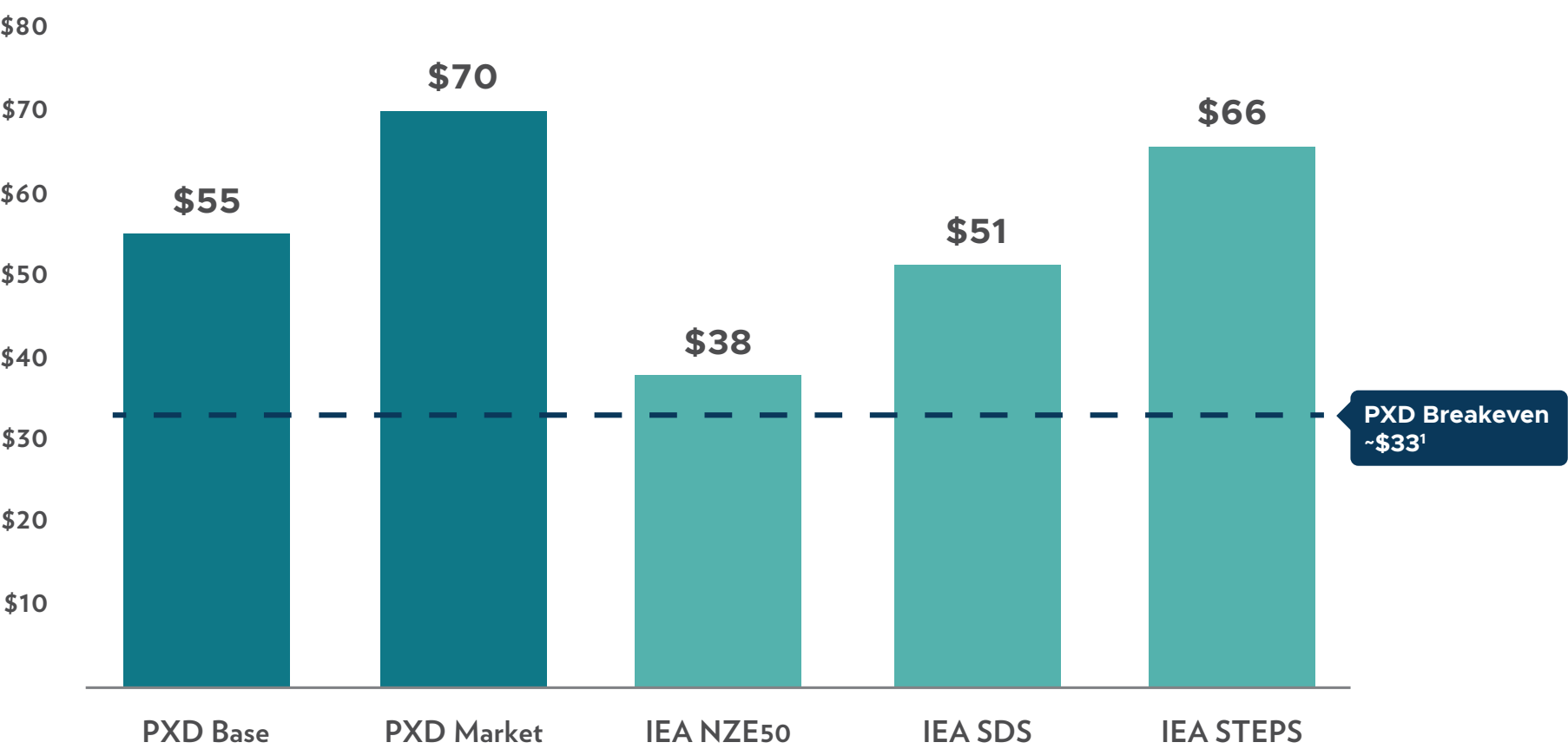
pricing environments. Some of the existing climate-focused scenarios forecast lower long-term commodity prices and by extension show a negative impact to Pioneer’s future asset viability. To enhance our analysis, we added a Market Case that is more reflective of current market prices and serves as a comparison to the IEA STEPS and IEA SDS scenarios. To the extent the current inflationary environment persists longer-term, Pioneer may reassess its future Base Case commodity price assumptions.

The viability of Pioneer’s long-term business strategy was positively impacted by the PXD Market Case and the IEA STEPS case. However, as a result of downward revisions to IEA’s near-term oil price assumptions in their updated 2022 scenarios, the IEA SDS case now shows a negative impact (relative to the Base Case) versus showing a positive impact compared to the Base Case in the same table a year ago. The revised IEA’s near-term oil price assumptions are significantly lower than the forecasted near-term prices in Pioneer’s Base Case and Market Case. Additionally, the revised near-term prices are substantially lower than current market quoted oil prices.

In contrast to commodity pricing, carbon pricing had only a minor impact (under 5%) on EBITDA per BOE due to Pioneer’s focus on minimizing its carbon emissions. Pioneer has one of the lowest Scope 1 and Scope 2 emissions intensities among producers in North America and is better situated than others to bear the cost of carbon prices associated with our emissions. This outcome is expected to be further improved as the company progresses its emissions reduction strategies. It is important to note that Pioneer’s carbon pricing analysis is attributed only to Scope 1 and Scope 2 GHG emissions (not Scope 3).

The company was most negatively impacted in IEA’s NZE50 scenario. This scenario focuses on outlining an ambitious pathway to keep global warming significantly below 2°C by 2050. Nevertheless, Pioneer seeks to comprehensively stress-test our business strategy. Evaluating net zero pathways is an important measure towards understanding the robustness of our assets across a wide range of pricing environments.

Pioneer Breakeven Cost Below 10-Year Average Oil Price in All Scenarios



1) Source: Enverus data (as of 8/10/2022) for wells placed on production during 2021 assuming a 20:1 WTI-to-Henry Hub price ratio and a 10% discount rate.

In addition to highlighting the resiliency of Pioneer’s assets in the context of a transition to a lower-carbon economy, this analysis also demonstrates the benefits of the company’s strategic efforts in 2020 and 2021 to consolidate the best assets in the Permian Basin. Pioneer’s 2021 wellhead breakeven price is below the 10-year average oil price in all of the modeled scenarios. As continued efficiencies and benefits of scale are realized, Pioneer’s assets are expected to remain competitive even in volatile pricing environments, implying Pioneer should be able to produce our assets profitably over the short- and medium-term.

Low-Cost, Low-Emission Resiliency

While the IEA scenarios offer potential future outcomes, they are not the only possible outcomes. There remain a wide range of climate policy, technical innovation and geopolitical forces that could shape future commodity prices. For that reason, Pioneer uses other internal and external forecasts to test its strategy. Based on our robust scenario planning, we believe Pioneer is in a strong position to navigate future scenarios due to the quality of our assets paired with our strong balance sheet, low-cost structure, low-emission intensity, and ambitious push for net zero Scope 1 and Scope 2 GHG emissions by 2050.

Additionally, Pioneer seeks to reflect the results of these scenarios in our corporate strategy. We take climate-related issues into account in our strategic planning by:

Establishing an internal carbon price of \$50 per tonne CO₂e on Scope 1 and Scope 2 emissions to test the resiliency of our investments against shifting regulation and to support our emissions goals.

Focusing on low-cost, low-carbon intensity assets that will remain competitive and return value to investors even in volatile pricing environments.

Evaluating acquisition opportunities that demonstrate continued growth in a low-carbon world.

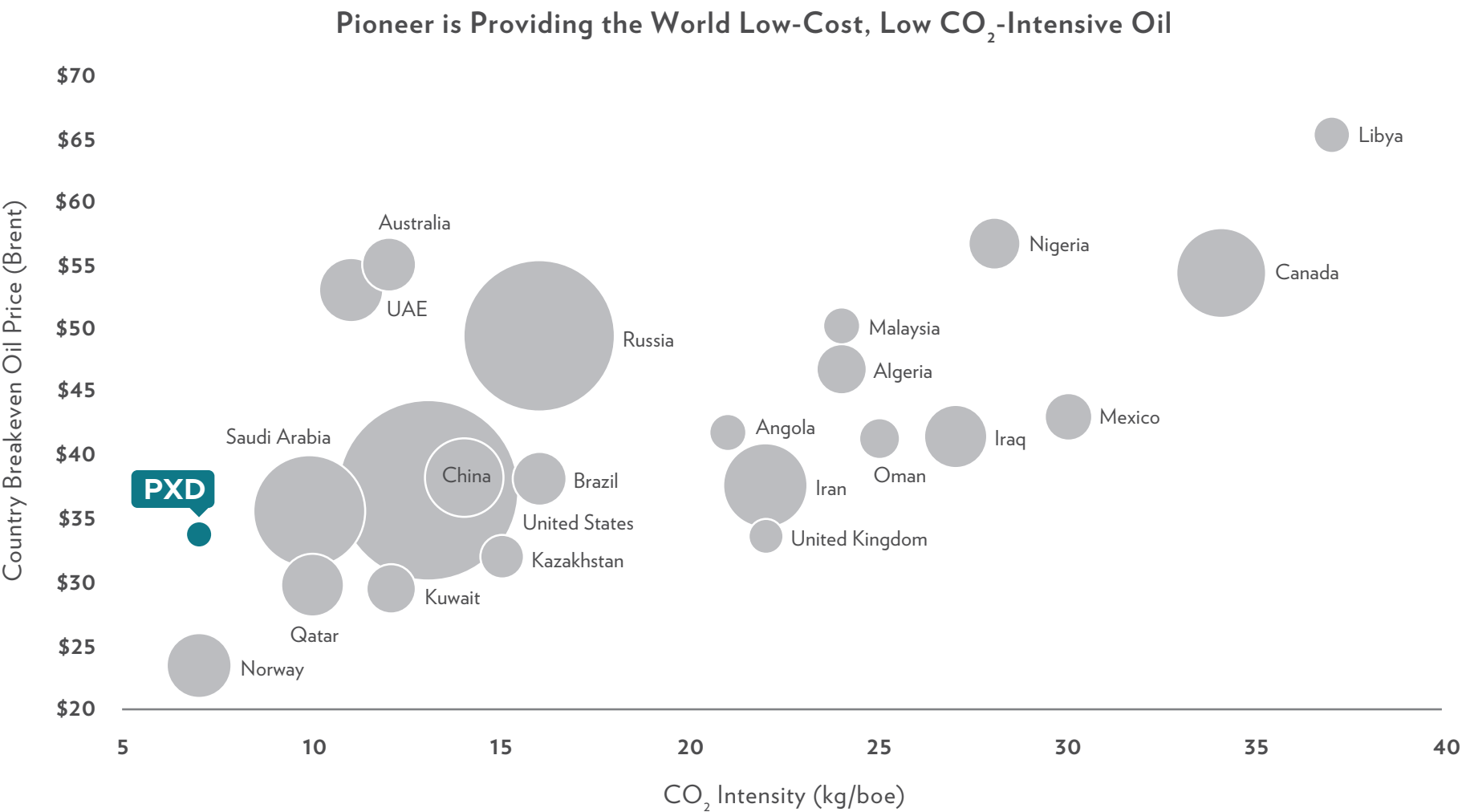
Developing long-term global demand models for oil and gas to assess the impact of evolving energy transition technologies.

Investing in key energy transition technologies through partnerships with ESG-focused funds and direct investment in renewables; carbon offset generation; battery storage; CCUS; and hydrogen production.

Electrifying our operations to reduce emissions.

Performing routine risk assessments to identify and evaluate the impact of emerging climate challenges on our business model and operations, including enhancing our physical risk assessment process.

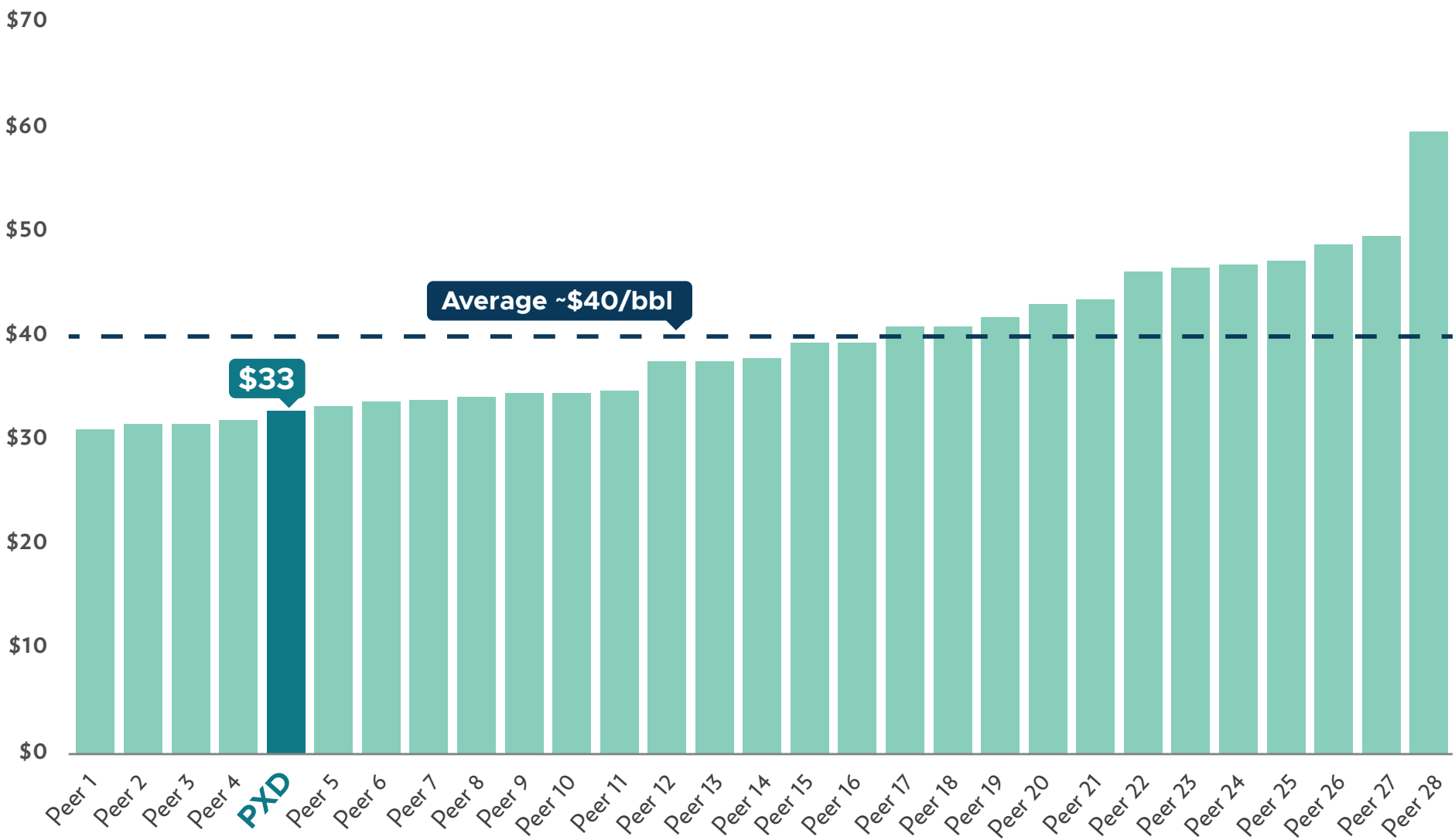
Many of the scenarios evaluated forecasted a continuing need for responsibly sourced oil and gas in the world’s economy in the coming decades, and it is those companies with the lowest-cost, lowest-emission intensity barrels that are expected to retain their social license to operate. As shown in the chart below, Rystad Energy estimates that Pioneer is among the lowest breakeven cost producers in the world, combined with a low CO2 intensity per barrel equivalent. This combination is critical when evaluating Pioneer’s viability in a decarbonizing world. In the most carbon-constrained scenario analyzed, NZE50, the IEA forecasts oil prices will decline over the next several decades and global oil production will decline to 24 million barrels of oil per day (MMBOPD) in 2050 compared to 90 MMBOPD in 2020. This implies that only the lowest-cost, lowest-emissions-intensive producers like Pioneer will remain viable in NZE50.





Additionally, Pioneer believes that we can maintain our low-cost leadership by combining our top-tier acreage position in the Permian Basin with our top-quartile drilling, completions, operations and supply chain performance, as well as industry-leading corporate overhead and interest costs. The chart below highlights Pioneer’s best-in-class corporate breakeven, which falls below the average of our peers. We expect to continue to improve our corporate breakeven costs through efficiency improvements and adoption of new technologies in our operations, allowing Pioneer to remain resilient even if demand erodes as the energy transition gains momentum.

Average 2021 Vintage Wells Breakeven by Operator



Peers include APA, ARX, BTE, CHK, CIVI, CLR, CNQ, COP, CPE, CPG, CTRA, CVE, CVX, DVN, EOG, EQT, FANG, HES, MRO, OVV, OXY, PDCE, SM, SWN, TOU, TVE, WCP and XOM. Enverus data on 8/10/2022. Breakeven price reflects PV-10 and a WTI-to-Henry Hub price ratio of @ 20:1.

While our short- to mid-term strategy focuses on maintaining industry-leading margins and low-emissions-intensive operations, our long-term strategy also includes establishing an investment program to capitalize on opportunities arising from the energy transition. Pioneer is partnering with select firms that have expertise in evaluating, executing and managing alternative energy investments. Through capital committed to these partnerships as well as opportunistic direct investments, Pioneer seeks to advance the energy transition and capture business opportunities by funding early-stage companies and piloting emerging technologies aimed at reducing emissions and improving efficiencies. Our investments center on key transition pillars, including battery storage, wind and solar renewable energy, hydrogen, CCUS and carbon offset generation. We believe these investments are a crucial step towards seeding the next generation of low-carbon opportunities for the company and paving the way for a responsible, sustainable energy transition.

While we plan to continue building our investment strategy, Pioneer has already dedicated capital to select opportunities that include:

- Providing seed funding to one of the largest designers and integrators of battery storage solutions in North America
- Leveraging our existing surface ownership position to evaluate and develop renewable energy projects, such as wind and solar generation to be utilized by our operations as well as service the electrical grid in the state of Texas
- Pursuing a field electrification strategy that includes expanding on our legacy electric infrastructure in order to move to all field-related activities to a grid-power driven, low carbon field of the future, with a near-term focus on electrifying drilling, completions and compression operations
- Providing funding for the development of nature-based carbon credit exchanges and accreditation mechanisms to support long-term, scalable carbon capture solutions
- Piloting technologies to desalinate produced water as part of our holistic approach to environmental stewardship that may allow for reuse opportunities beyond oil and gas, including agricultural uses



We believe this strategy positions Pioneer to continue to thrive in a volatile transition to a low-carbon landscape.

Chapter 4

Risk Management

Pioneer recognizes that climate change is a global issue that will impact the way we operate our business. As such, we continue to seek ways to improve our understanding of climate-related risks and opportunities and are integrating these variables into our overall risk management process.

Enterprise Risk Management Process

Pioneer utilizes a comprehensive enterprise risk management (ERM) process to identify, assess, manage and report our risks and opportunities, with the objective of aligning our risk management policies and procedures with our strategy. The Board oversees Pioneer’s enterprise risk management program, while the Management Committee evaluates, manages and executes day-to-day management activities across the major risk categories comprised of general business and industry, operational, financial, HSE and regulatory risks. The company reviews each principal risk for associated climate-related risk. Potential climate-related risks are further divided into transition risks that stem from the world’s transition to a lower-carbon economy or physical risks that result from acute and chronic physical impacts of climate change.

Our enterprise risk management process is summarized as follows:



- **Company Strategy**— Align company goals and risk identification with the strategic objectives of the Board and the Management Committee
- **Risk Identification**— Identify uncertainties/risks that could impact the achievement of the company’s business objectives
- **Risk Assessment**— Valuate risks identified and the possible impact to the company
- **Risk Response**— Determine risk mitigation plans and responses to transfer, tolerate, terminate or otherwise address identified risks
- **Monitor and Report**— Report risks in the enterprise risk management matrix and continuously monitor those risks and associated mitigation plans responses

Key business and other relevant risks are tracked and monitored in a detailed enterprise risk management matrix that aligns those risks with the appropriate management oversight processes and practices. Each principal risk identified has an assigned owner, generally an officer of the company whose responsibilities are most impacted by the potential risk or whose function aligns with the mitigation of the risk.

Each owner is responsible for managing the overall risk and the associated mitigation plan in conjunction with relevant management or external support. An annual assessment of these risks is supplemented by quarterly, or as needed updates based on selected issues. Risks are rated and plotted within the enterprise risk management matrix according to how significant the risk is, how likely the risk is to occur, its impact on the business and how quickly the risk event could occur with current controls and strategies in place.


Our Internal Audit organization facilitates an annual risk identification and assessment process that includes input from all business groups and corporate functions. During this process, existing risks are discussed for continued relevance and new risks are identified and discussed based on company, industry, global and regulatory developments. During this process, risk ratings, the likelihood and potential impact of all identified and assigned risks, as well as mitigation plans, are reassessed and updated by the owners. The updated ERM matrix is then distributed to the Management Committee for a holistic review to achieve alignment on risk identification, assessment and response. Following the review by the Management Committee, the updated ERM matrix is presented to the Board. Although the risk identification and assessment processes are formally executed on an annual basis, the ERM program is embedded into our day-to-day culture and the risk assessment is updated throughout the year as needed.

Integration of Climate-related Risk Assessment into the Overall Risk Management Process


Pioneer believes that the most effective approach to managing climate-related risks is by integrating the assessment of these risks into our existing ERM process. Many of the physical risks (e.g., increased frequency and severity of storms) and transition risks (e.g., carbon pricing) associated with climate change have been previously identified as part of our ERM process and categorized according to the underlying risk to the enterprise. We believe that the most robust management of enterprise risks occurs by fostering a corporate culture that encourages regular discussion and consideration of identified and emerging risks, including climate-related risks.

We also ensure that the conclusions developed in our strategic and scenario planning processes are used to inform our ERM process in evaluating climate and other risks that could impact our business. Climate-related risks are factored into our corporate decision-making processes, including during the evaluation of potential acquisitions or other business development opportunities.


Pioneer’s approach to integrating climate-related risk into its overall risk management process includes the following key focus areas:

- 


HSE Culture

Promoting a strong HSE culture through employee engagement activities, training and communication. These programs are used to educate, empower and encourage Pioneer employees to focus on safety and environmental stewardship in their daily lives— both at work and at home.
- 

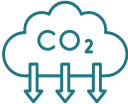
Emission Mitigation Practices

Designing and constructing infrastructure, implementing operational best practices, and incorporating new technologies that provide better and more efficient emission control.
- 


Water Management

Minimizing the use of freshwater in completion activities by using reclaimed water and reusing produced water.
- 


Landscape Stewardship

Engaging with third parties, including government agencies, researchers, consultants and others to source and explore new solutions for protecting local habitats and species in the areas where we operate.
- 

Low Carbon Technologies

Investing in low carbon technology opportunities that improve efficiencies, reduce our field emissions and accelerate energy transition technologies.
- 

Supply Chain Management

Working with suppliers whose core values and climate-related policies align with our own. Our supplier onboarding process now incorporates data that benchmarks our suppliers on a variety of ESG criteria, including human rights, social and governance standards, as well as environmental policies and sustainable procurement methods. This program is designed to identify suppliers who are aligned with our ESG goals and policies and to monitor the relationship between our spend with those suppliers and their ESG scores.
- 

Industry Collaboration

Working in a collaborative and transparent manner with industry peers and other energy companies to discuss climate-related risks and promote alignment on policies and best practices.

Climate-Related Risks and Opportunities

The energy transition will change Pioneer’s operational environment in a variety of ways. The impact of these developments to our business will depend on the speed and scope with which they occur. When considering the climate-related risks, TCFD identifies two categories of climate-related risks: physical and transitional. These risk categories include the potential financial impacts of climate change and are used to assist investors and companies as they evaluate longer-term strategic decisions regarding where and how to most efficiently allocate capital.

Physical Risks

Having operated in the Permian Basin for decades, we have identified and effectively mitigated most physical risks that impact our assets. For example, the winter storm experienced throughout Texas in early 2021 tested the readiness of our internal crisis management team and the resiliency of our operations. While our business was significantly impacted due to unprecedented downtime from historically low temperatures for an extended time, we were able to manage through the winter storm by leveraging our crisis management systems and quickly restore operations to normal conditions as the cold weather subsided. The company also mitigates business disruptions through equipment design, strategic supplier relationships and by securing key materials, supplies and services critical to our operations. For example, Pioneer’s long-term agreements to secure casing and tubular supplies, local sand and reclaimed water provide physical risk mitigation.

The following table reflects a subset of the climate-related risks identified in the company’s ERM process, specifically, those that are believed to have the potential to impact our business.

	Risk Driver	Potential Time Horizon	Potential Financial Impact	Risk Driver and Ongoing Mitigation Strategies
ACUTE	Increased severity of extreme weather events	Short-, medium- and long-term	Increased operating expenses and capital costs	<p>Extreme weather events such as winter storms or flooding may negatively impact drilling, completions and production operations, midstream infrastructure and power providers, along with many other services.</p> <p>Risk mitigation efforts include:</p> <ul style="list-style-type: none">• Maintaining robust business continuity programs and a crisis management response team that are routinely tested• Designing and installing production facilities and power distribution systems to minimize the potential impacts of extreme weather• Developing standard operating procedures for harsh weather conditions that prioritize employee safety and environmental safeguards• Utilizing Pioneer’s remote operations monitoring system (SCADA) to provide real-time data, allowing our personnel to monitor operations safely during adverse weather and to efficiently dispatch resources to impacted locations
CHRONIC	Attract and retain talented workforce	Medium- and long-term	Increased operating expenses	<p>Sustained changes to the climate can present operational challenges not previously experienced such as prolonged periods of excessive heat or drought conditions.</p> <p>Risk mitigation efforts include:</p> <ul style="list-style-type: none">• Monitoring the impacts of weather conditions on equipment performance to better understand the challenges posed by sustained changes in climate patterns• Leveraging supplier relationships, including strategic relationships with key suppliers for casing and tubular goods, sand and reclaimed municipal water



Physical Risk Assessment

Pioneer has a long history in the Permian Basin, providing significant experience in identifying climate-related physical risks and developing proactive mitigation strategies. Pioneer’s production facilities, gathering and water management infrastructure are planned, designed and operated to withstand the physical operating conditions in the Permian Basin. However, it is important to understand the magnitude of potential future climate-related physical risks on the company’s assets to improve the company’s long-term planning. For this reason, Pioneer engaged Jupiter Intelligence,[™] a leader in physical climate risk analytics, to conduct an inaugural baseline physical risk assessment. This effort has increased our awareness of the future physical risks of climate change that could affect our workforce, local communities and assets.









Following the TCFD guidance, we utilized three physical risk scenarios (low/intermediate/very high) based on the Shared Socioeconomic Pathways (SSP) that were produced to support the International Panel on Climate Change (IPCC) Sixth Assessment Report, published in 2021. Our physical risk assessment was completed by applying the SSP — 4.5 scenario results to a selection of Pioneer locations in the Permian Basin. Scenario SSP — 4.5 is the intermediate scenario, with emissions peaking in 2040 and then falling through 2100. The physical risk assessment was based on the location of 71 current and 11 future Pioneer production facilities. The selected locations represent more than 75% of the company’s daily production in the second quarter of 2022 and are distributed across Pioneer’s total acreage position within the Midland Basin.

Based on these criteria, the Jupiter Intelligence[™] has modeled five-year periods from year 2000 to 2100, which provide Pioneer with more than 7,000 individual climate-related metrics for each location. The scenarios results provide a clear picture of the site-specific physical climate-related risks that may increase, decrease or remain stable from our 2020 baseline. The scenario outputs presented below are intended to outline conditions from 2020 through 2030 and 2050 to align with Pioneer’s emission intensity targets and our long-term net zero ambition.

Based on the Jupiter Intelligence[™] models, Pioneer locations appear relatively stable within their risk categories for the long-term, and the company should not expect significant shifts in overall risk categorization ranking over the time periods evaluated . The results for extreme heat, drought and severe thunderstorm categories show that Pioneer will need to continue efforts to design and operate its assets with these risks in mind. For example, Pioneer’s progress and commitment to reduce utilization of freshwater in its operations is designed to mitigate the risks associated with potential drought conditions in the Permian Basin. The company’s production facilities are also designed to withstand extreme thunderstorms. The Jupiter Intelligence[™] models also indicate that exposure to extreme cold temperature events in the company’s operating areas is likely to decrease by the end of the decade and continue to decrease significantly by 2050.

The following table presents the results of the 2022 physical risk assessment completed for Pioneer’s assets utilizing the Jupiter Intelligence™ models (as described above). The results illustrate that Pioneer’s physical risk exposure is relatively stable over the long-term.

2022 Baseline Physical Risk Assessment Results – Magnitude of Forecast Climate Change

	 Flood 100-year event depth of water	 Wind 100-year event max sustained wind speeds	 Precipitation 100-year event max precipitation	 Wildfire Potential local wildfires	 Cold Annual days below 32°F	 Severe Thunderstorms Annual days conducive for storm formation	 Drought Water demand divided by watershed supply	 Extreme Heat Days exceeding 95°F
PXD 2020 Baseline Measurement	0.1 feet	54-55 miles per hour	5-6 inches	4 per 1,000 years	18-20 days	35-37 days	10.2-10.4	58-60 days
IPCC Scenario	2020 Baseline20302050	2020 Baseline20302050	2020 Baseline20302050	2020 Baseline20302050	2020 Baseline20302050	2020 Baseline20302050	2020 Baseline20302050	2020 Baseline20302050
Low SSP1-2.6 (1.8 °C)								
Intermediate SSP2-4.6 (2.7 °C)								
Very High SSP5-8.5 (4.4 °C)								
Projected Risk Trend Intermediate Scenario Average Percent Difference	Stable 0%	Stable 0%	Stable -1%Stable -1%	Decrease -3%Stable +1%	Stable +1%Increase 9%	Decrease -8%Decrease -22%	Stable +1%Stable +2%	Stable -2%Stable -2%Increase +8%Increase +25%

IPCC Scenario
Risk Category Shading
Risk Categories determined by relative risk to the Global Climate Model

Highest	>10 feet
High	7-10 feet
Medium	3-7 feet
Low	0.8-3 feet
Lowest	<0.8 feet

Highest	>111 mph
High	74-111 mph
Medium	56-74 mph
Low	39-56 mph
Lowest	<39 mph

Highest	>10 inches
High	8-10 inches
Medium	6-8 inches
Low	4-6 inches
Lowest	<4 inches

Highest	>20
High	8-20
Medium	4-8
Low	2-4
Lowest	<2

Highest	>100 days
High	60-100 days
Medium	15-60 days
Low	2-15 days
Lowest	<2 days

Highest	>30 days
High	20-30 days
Medium	10-20 days
Low	5-10 days
Lowest	<5 days

Highest	>0.8
High	0.6-0.8
Medium	0.4-0.6
Low	0.2-0.4
Lowest	<0.2

Highest	>30 days
High	20-30 days
Medium	10-20 days
Low	5-10 days
Lowest	<5 days

1) All metrics presented are outputs from Jupiter Intelligence Climate Model, ClimateScore Global version 2.6. 2) Model result average values for all assessed tank battery locations (n=82).

Transitional Risks

Transitional risks present various challenges when it comes to addressing the mitigation and adaptation requirements related to climate change. These risks have the potential to shift the supply and demand for fossil fuels, due to changes in consumer preferences, regulatory requirements, technology or other areas of impact. As shown in the table below we evaluate and assess transitional risks on an ongoing basis. Pioneer believes our business and risk management practices reduce the risk of damage to the company over time.

	Risk Driver	Potential Time Horizon	Potential Financial Impact	Risk Driver and Ongoing Mitigation Strategies
MARKET RISKS	Energy and financial market volatility	Short-, medium- and long-term	Decreased revenue	<p>Commodity prices may fluctuate widely in response to relatively minor changes in supply and demand fundamentals and as result of consumer preferences towards less carbon-intense energy sources.</p> <p>Risk mitigation efforts include:</p> <ul style="list-style-type: none">• Maintaining low operating, corporate overhead and interest costs, and preserving a strong balance sheet to ensure financial, strategic and operational flexibility• Accessing global oil and gas markets• Consider (dependent on market environment) derivative contracts to (i) reduce the effect of price volatility and (ii) support the company’s annual budget and expenditure plans
POLICY AND LEGAL RISKS	Carbon price implementation	Medium- and long-term	Increased operating expenses	<p>The company is not currently affected by carbon pricing; however, carbon pricing or carbon taxes exist in certain regions of the world. The company could become subject to carbon prices if future policy actions are enacted.</p> <p>Risk mitigation efforts include:</p> <ul style="list-style-type: none">• Implementing an internal carbon price of \$50 per tonne on Scope 1 and Scope 2 emissions• Monitoring emerging legislation and policy trends• Delivering on the company’s Scope 1 and Scop 2 GHG emissions intensity reduction targets
	Restrictive regulatory regime	Short- and medium-term	Increased capital expenditures, operating expenses and cost of capital	<p>The oil and gas industry is regulated by numerous federal, state and local authorities. New climate-related legislation could affect the oil and gas industry by increasing the regulatory burden.</p> <p>Risk mitigation efforts include:</p> <ul style="list-style-type: none">• Delivering on the company’s Scope 1 and Scope 2 GHG emissions-intensity reduction targets• Engaging with policymakers to advocate for practical emission regulations• Continuing to implement operational policies and best practices that reduce Scope 1 and Scope 2 GHG and methane emissions ahead of regulatory requirements

	Risk Driver	Potential Time Horizon	Potential Financial Impact	Risk Driver and Ongoing Mitigation Strategies
TECHNOLOGY RISKS	Technology advancements accelerate energy transition	Medium- and long-term	Decreased revenue	<p>Continued cost reductions in alternative energy technologies or the emergence of breakthrough technologies could accelerate fossil fuel substitution.</p> <p>Risk mitigation efforts include:</p> <ul style="list-style-type: none">• Maintaining low operating, corporate overhead and interest costs• Preserving a strong balance sheet to ensure financial, strategic and operational flexibility• Investing in energy-transition technologies
REPUTATIONAL RISKS	Attract and retain talented workforce	Medium- and long-term	Increased operating and overhead expenses	<p>The success of the company is dependent on its ability to identify, attract, develop, motivate, adequately compensate and retain highly skilled and qualified employees and management, which could be impacted by a negative perception of the company and/or the industry.</p> <p>Risk mitigation efforts include:</p> <ul style="list-style-type: none">• Maintaining a recruiting presence at higher education institutions and local trade schools• Maintaining and communicating Pioneer’s RESPECT values and Pioneer’s focus on sustainability• Promoting the company’s diversity, equity and inclusion (DEI) workforce policies• Fostering open communication about the role of Pioneer as a leader in the energy transition
	Negative perception of the company	Medium- and long-term	Increased cost of capital	<p>ESG criteria are an increasingly popular way for investors and other stakeholders to evaluate the company’s risk profile around ESG issues and influences the public perception of the company.</p> <p>Risk mitigation efforts include:</p> <ul style="list-style-type: none">• Maintaining a leading ESG strategy that is responsive to stakeholder feedback• Delivering on the company’s Scope 1 and Scope 2 GHG emissions intensity reduction targets and other key ESG goals• Publishing a Sustainability Report, Climate Risk Report and other related publications that enable quantitative and qualitative ESG analysis• Communicating regularly with the stakeholder community and soliciting feedback• Continuing the company’s long-standing practice of supporting its local communities through its Corporate Giving program and continuing to play a role in the Permian Strategic Partnership (PSP), which is working to improve the communities where the company operates

Climate-related Opportunities

Climate-related opportunities arise through efforts to mitigate and adapt to climate change, including improving resource efficiency, securing lower-emission energy sources and producing differentiated oil and gas products for emerging markets. Climate-related opportunities include efficiencies that result in an increase in revenue and reduced operating and capital costs. Some of the climate-related opportunities that Pioneer has identified are noted below:

Resource Efficiency

Increase revenue through improved methane capture

- Upgrading legacy equipment to minimize emissions
- Maximizing vapor recovery and minimizing fugitive emissions
- Reducing flaring
- Engaging in development of methane detection technologies (aerial and fixed-sensor monitoring)
- Engaging with gas processors to improve schedule visibility and enabling sufficient takeaway capacity

Increase production efficiencies and lower overall energy intensity

- Transitioning to electric compression at tank battery locations
- Utilizing technology for remote monitoring and route optimization
- Piloting electric drilling and completions equipment for improved efficiencies and lower emissions

Improve water management flexibility through additional non-freshwater sourcing

- Expanding produced and reclaimed water reuse infrastructure
- Evaluating potential opportunities for desalination and water commercialization
- Investing in wastewater treatment facilities and securing long-term affordable reclaimed water supplies

Please reference Pioneer’s *Sustainability Report* for additional details.

Energy Sourcing

Reduce energy costs and improve reliability

- Increasing field electrification through a combination of grid power utilization and renewable energy
- Evaluating compressed natural gas and hydrogen to replace diesel
- Exploring opportunities to deploy in-field battery power storage solutions
- Expanding the ~4,000 miles of power infrastructure owned by Pioneer

Products, Markets and Investments

Improve product pricing

- Pursuing opportunities to certify lower-carbon intensity production that could potentially command premium pricing
- Bolstering relevant global markets access by producing responsibly extracted oil and gas
- Continuing to transport product to the Gulf Coast allowing access to the global markets

Resilience & Diversification

Invest in and increase exposure to the energy transition and low-carbon technologies

- Working with leading investment firms to gain knowledge and market insight in the renewable and energy transition industries, develop renewable energy projects and pursue investment opportunities that could provide broader diversification opportunities in the energy transition
- Evaluating opportunities to advance energy transition technologies by leveraging our water infrastructure and water supply and disposal systems
- Advancing subsurface technical understanding of carbon capture opportunities and progress enhanced oil recovery (EOR) pilot programs

Stakeholder Engagement

Pioneer prioritizes a constructive and transparent relationship with all stakeholders to understand their views of perceived risks, the likelihood of the risks’ occurrence and potential impacts. Our Investor Relations team facilitates communication with shareholders and answers questions about our business and ESG matters. Additionally, shareholder outreach occurs prior to the company’s Annual Meeting to discuss matters to be voted on at the meeting. Following the Annual Meeting, our CEO and Chairman of the Board conduct shareholder outreach meetings to discuss a wide range of topics of concern. The topics covered in these discussions were collected, reviewed and shared with the Board.

In addition to shareholder engagement, Pioneer annually solicits feedback from ESG rating agencies, shareholder services and NGOs on our ESG practices and goals to better align with their stated priority issues for the upstream oil and gas industry.

Pioneer periodically conducts ESG materiality assessments to identify and prioritize sustainability topics that we believe are most significant to our stakeholders. The content prioritization of this report is the result of an ongoing process that considers internal perspectives, stakeholder feedback and relevant reporting guidelines.

We expect the content of our climate risk reporting to evolve as Pioneer assesses and responds to continued feedback and as changes to our business warrant. Our Annual Report and financial filings include material risks in compliance with regulatory requirements or that we believe are material to our investors. Detailed analysis of our financial performance can also be found in our *Annual Report*.

Partnerships with External Stakeholders

In 2021, Pioneer engaged with financial institutions, non-governmental and intergovernmental organizations, and the scientific community as well as other oil and gas operators to align on actions that drive shared climate-related goals.

U.S. E&P Net Zero Principles Roundtable

In June 2021, Pioneer was invited to participate in the U.S. E&P Net Zero Principles Roundtable with a group of banking institutions, investment firms, non-government organizations and other leading independent E&P companies. The roundtable was facilitated by Ceres, a nonprofit organization focused on equitable market-based and policy solutions to solve the world’s sustainability challenges. Pioneer continues to play an active role in the Roundtable as the group collaborates to define the key elements of a U.S. E&P net zero transition path.

Methane Partnerships

Starting in 2021 and through early 2022, Pioneer engaged in dialogue with investors, NGOs and several Permian peer companies to identify common objectives in reducing emissions. The group collectively recognized the Oil and Gas Methane Partnership 2.0 (OGMP), a voluntary private-public coalition with leadership and oversight from the United Nations, as an opportunity to improve the accuracy and transparency of methane emissions reporting and create a consistent platform to track actual emissions reductions. Pioneer and a few Permian peers then coordinated directly with OGMP staff over several meetings to fully understand the framework and commitments of the Partnership. As a result, Pioneer joined OGMP in July 2022, making our company among the first U.S. operators to participate in the initiative. Through OGMP, Pioneer plans to establish a new methane intensity target in 2023, placing the company on the path of achieving the OGMP “Gold Standard” designation by 2025. We also joined the complementary Veritas, another multi-stakeholder initiative, to accelerate actions that reduce methane leakage from upstream production facilities.



Chapter 5

Metrics and Targets

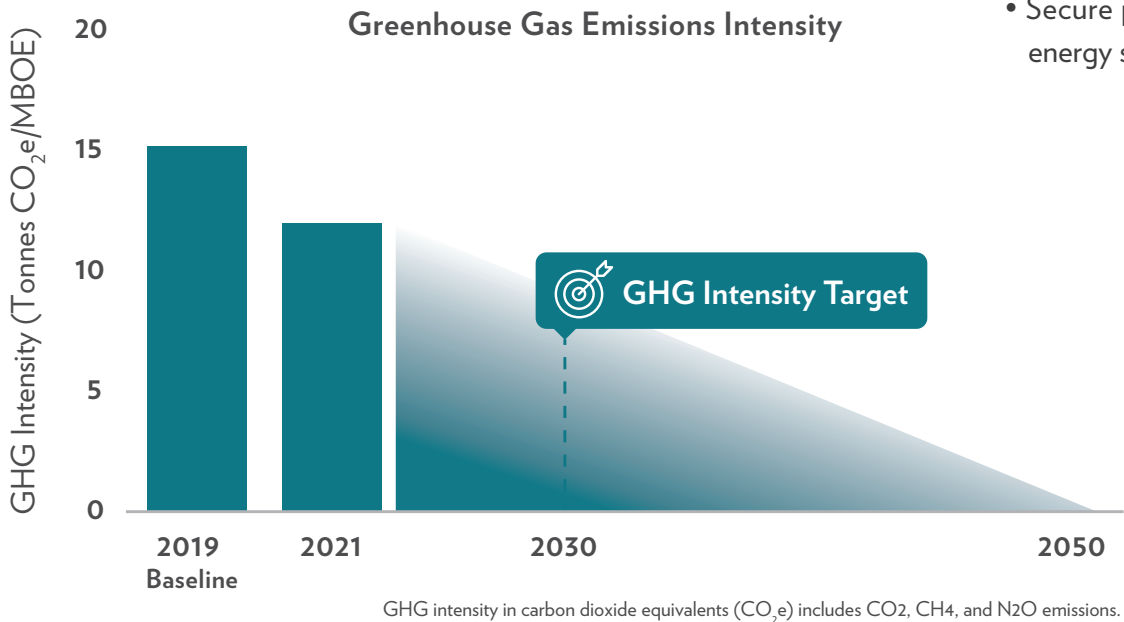
Addressing climate change is an important priority at Pioneer. We strive to proactively limit emissions of methane and other greenhouse gases from our operations while assessing and managing the impacts of climate change on our business. We believe our strategy, capital discipline, operational excellence and best-in-class assets positively position Pioneer to meet these challenges. We are committed to working with all stakeholders to address our impacts on the environment, while providing the sustainable supply of abundant, affordable, responsibly produced energy.

Our Net Zero Pathway

Pioneer set targets to reduce our Scope 1 and Scope 2 GHG emissions intensity by 50% and our methane emissions intensity by 75% by 2030 (from our 2019 baseline), the achievement of which would align with Pioneer’s ambition to achieve net zero emissions (Scope 1 and Scope 2) by 2050.

These targets are based upon operationalized plans through 2030, and we will continue to follow best practices in our pursuit of GHG and methane emissions intensity reductions.

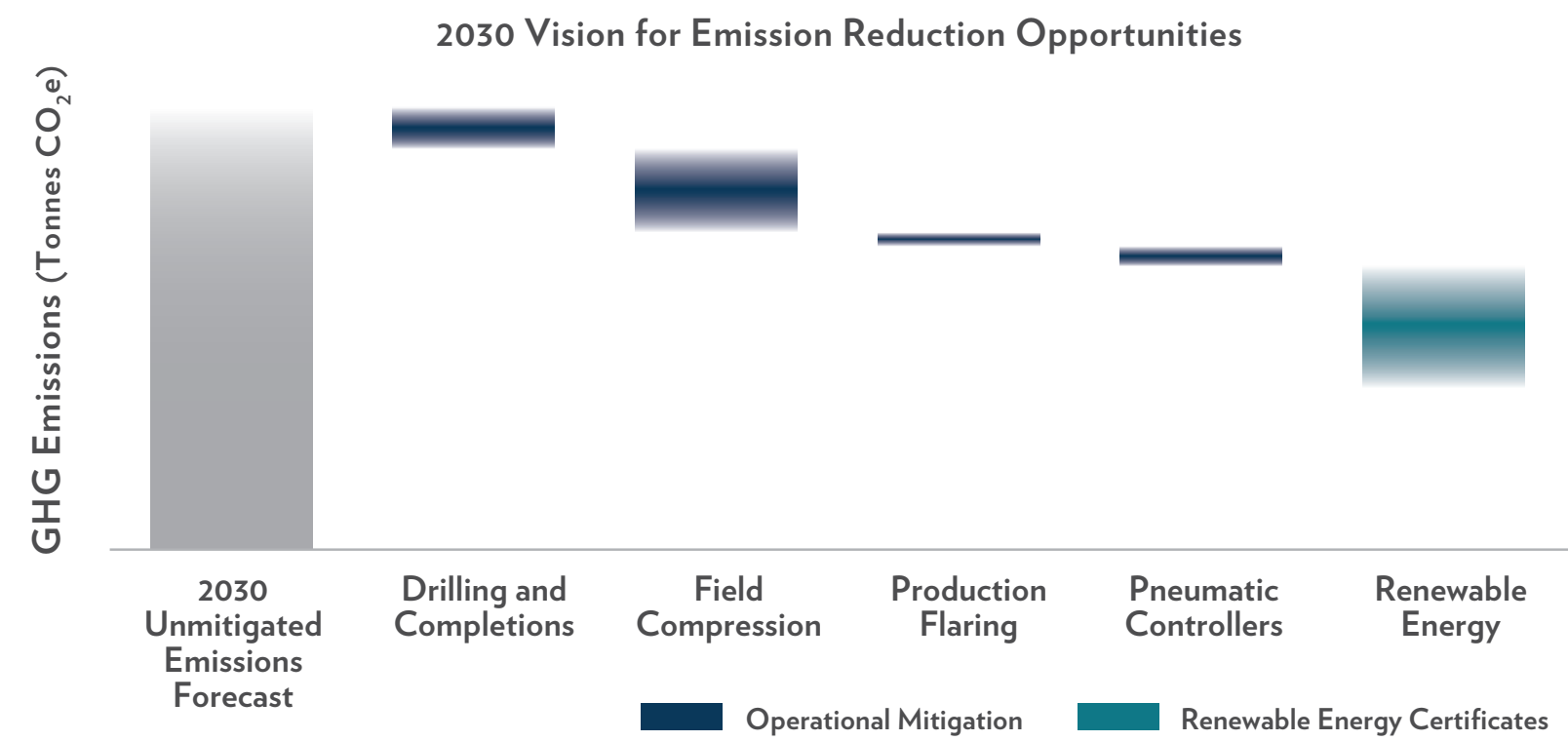
We recognize that the environment in which we operate is dynamic and, as a result, we will continue to review and revise our emissions reductions plan on an ongoing basis. We are proactive in communicating and planning with third parties, especially where externalities, such as materials availability, equipment supply, technology development, and gas-gathering and power infrastructure buildout can affect our progress.



Pioneer’s overall strategy to manage GHG emissions, is comprised of the following actions:

- Reduce methane emissions through facility design, operation and leak management
- Eliminate routine flaring and limit flaring to circumstances related to emergency or upset conditions
- Minimize GHG emissions through electrification of field operations
- Secure purchase power supply arrangements from renewable energy sources and associated renewable energy certificates (RECs)

This strategy underpins our vision for both reducing existing Scope 1 and Scope 2 emissions as well as curtailing growth of potential future Scope 1 and Scope 2 emissions. As depicted in the chart below, the impact of these cumulative actions will not only significantly decrease our baseline forecasted for 2030 but also drive our trajectory towards net zero Scope 1 and Scope 2 emissions by 2050.



Pioneer’s primary objective is to manage emissions from our own operations. We do not intend to rely on carbon offsets to meet our emissions targets in the near-term. However, Pioneer is investigating carbon-reduction technologies and nature-based solutions that may play a role in helping us neutralize residual Scope 1 emissions and realize our net zero ambition in the longer term. In addition, Pioneer anticipates relying on field-supported RECs to help mitigate our Scope 2 emissions.

To achieve our emissions targets, we are in the process of developing proactive measures centered around operational best practices, technological innovation, applied research and industry partnership. Through collaboration, we leverage the varied skillsets of our teams to create innovative approaches to mitigate emissions and emission-related risks. We reinforce this alignment through incentive compensation policies established by the Board. Further details on our emissions reduction strategy and related emissions reduction measures can be found in our *Sustainability Report*.

Pioneer recognizes the goals of the Paris Agreement in ultimately limiting a global temperature increase to well below 2°C. Pioneer has both instituted operational changes and set Scope 1 and Scope 2 GHG emissions intensity goals through 2030 that we believe are consistent with the IEA SDS scenario reduction in global oil and gas GHG emissions intensity of 40% between 2019 and 2030. According to the IEA, the SDS scenario is fully aligned with the Paris Agreement.

Progress Toward Our Emissions Targets

Interim Emissions-intensity Targets

To support our net zero ambition and drive incremental progress, we have established targets to:

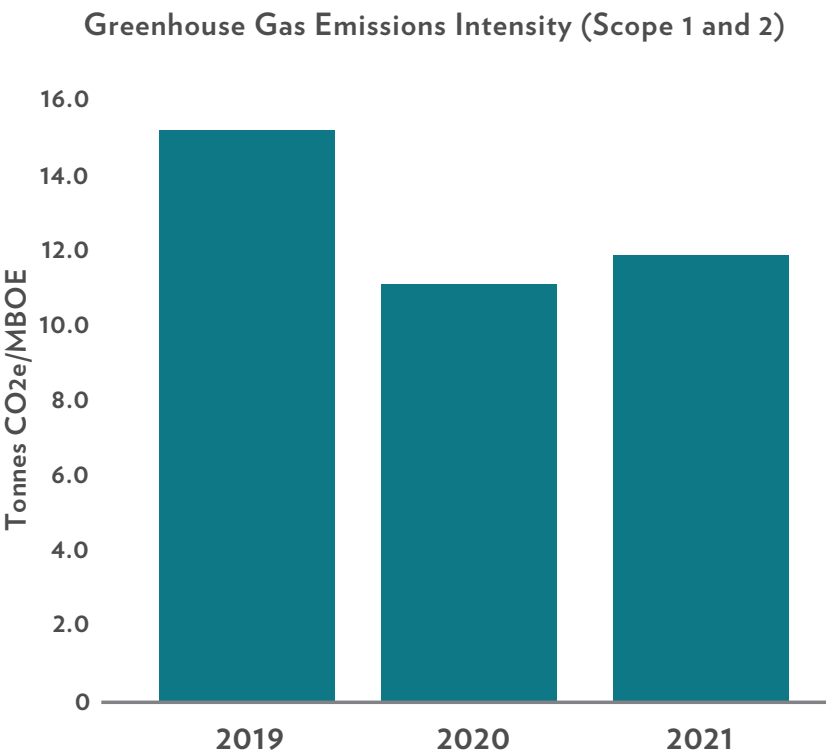
- Reduce our Scope 1 and Scope 2 GHG emissions intensity 50% by 2030
- Reduce our methane emissions intensity 75% by 2030

These targets represent emission reductions from our operated assets from a full-year 2019 emissions baseline. Quantifying and reporting our emissions on an intensity basis is the best way to demonstrate progress and accountability in the near term given the dynamic nature of upstream oil and gas assets. Pioneer will report our performance progress against these targets annually, consistent with our reporting principles. GHG emissions intensity performance will be based on Scope 1 and Scope 2 GHG emissions divided by gross oil and gas production in terms of tonnes carbon dioxide equivalent (CO₂e) divided thousand barrels of oil equivalent (MBOE). Methane emissions intensity performance will be based on methane emissions in terms of CO₂e divided by gross oil and gas production (tonnes CO₂e/MBOE).

Pioneer’s emissions in 2021 were impacted by the resumption of activity post-2020 (which was impacted by the COVID-19 pandemic) and the acquisition of new assets with higher emissions intensities. We have worked diligently to bring the acquired assets in line with our operational standards, which are consistent with our emissions reduction targets. Pioneer expended capital to upgrade the acquired facilities, including adding vapor recovery units, replacing pneumatic controllers and other modifications. Inclusive of these acquired assets, in 2021 we report:

A 22% reduction in Scope 1 and Scope 2 GHG emissions intensity from our 2019 baseline

A 50% reduction in methane emissions intensity from our 2019 baseline

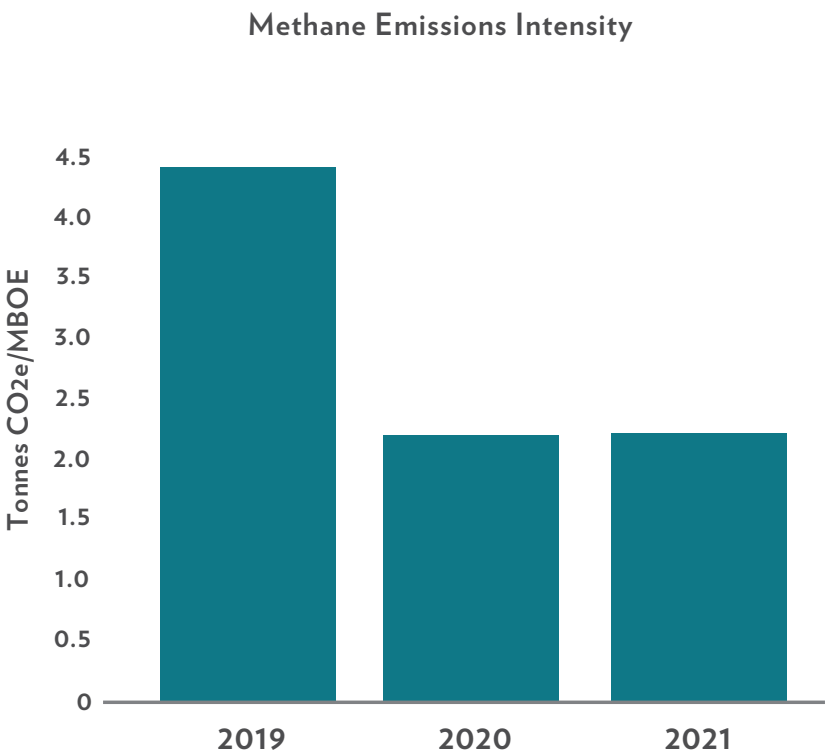


Flaring Reduction Targets

- Pioneer also established two targets specific to production flaring:
- Limit our annual flaring intensity to less than 1% of our natural gas produced
 - Zero routine flaring by 2025, five years earlier than our original 2021 commitment of zero routine flaring by 2030

Flaring intensity performance will be based on natural gas volumes flared during production operations divided by gross natural gas production in terms of thousand standard cubic feet (Mscf). Pioneer formally endorsed the Zero Routine Flaring by 2030 Initiative. We established processes to identify, quantify and manage routine and non-routine flaring. We will report our routine and non-routine flaring volumes consistent with the initiative starting in 2023 (for the 2022 operating year).

Year over year, Pioneer has maintained low levels of flaring, even while integrating two newly acquired companies into Pioneer’s



ongoing operations. In 2021, our annual flaring intensity was 0.41%, which is 59% lower than our 1% threshold commitment and 68% lower than the Permian Basin average of 1.3% reported by Rystad Energy. Detailed information on our emission inventory methodologies, as well as definitions of Scope 1, Scope 2 and other air emissions, are provided in our *Performance Data Table* and *Methodologies and Definitions*.

Carbon Pricing

Pioneer’s assets are in the Permian Basin of West Texas and therefore not currently subject to a regulated carbon price. Nevertheless, Pioneer believes that setting an internal price on carbon is an important step in assessing the resiliency of our assets . This year, we are implementing an internal \$50 per tonne price on Scope 1 and Scope 2 GHG emissions to assess investment decisions and test the financial resiliency of our assets in a shifting regulatory landscape. The price was based on a benchmarking study that evaluated large E&Ps, existing carbon markets, public climate scenarios from the IEA

and government standards like the U.S. Social Price of Carbon. Setting an internal shadow carbon price will support Pioneer’s efforts to reduce emissions along our pathway to net zero Scope 1 and Scope 2 GHG emissions. Management can quantify the impact of emissions to assist in near-term project prioritization as well as guide long-term acquisition and divestment opportunities. Likewise, the price provides a baseline target for supporting carbon abatement opportunities and emerging low-carbon technologies, as well as embedding the company’s commitment to lower-carbon operations into our business strategy. As our climate strategy matures, we will continue to evaluate the most effective approach necessary to deliver our near-term emissions intensity targets and long-term Scope 1 and Scope 2 net zero ambition.

Scope 3 GHG Emissions

Pioneer has publicly reported operated Scope 1 and Scope 2 emissions since 2019. Scope 1 and 2 emissions are within the direct control of the company, and Pioneer has set interim emissions reduction targets that put us on a path towards net zero Scope 1 and Scope 2 GHG emissions by 2050.

Scope 3 emissions are an estimate of the indirect GHG emissions that are not generated by Pioneer’s operations (Scope 1) nor by the energy purchased by the company (Scope 2). Scope 3 emissions occur from sources owned or controlled by other entities in the company’s value chain, both upstream and downstream. The bulk of Scope 3 emissions are created from the transportation, processing and end-use of a company’s products (GHG Protocol and IPIECA categories 9, 10 and 11) and are outside the company’s direct control. Nonetheless we recognize that Scope 3 GHG emissions are an important consideration for many of our stakeholders. Therefore, we have decided to disclose our emissions in categories 9, 10 and 11 as they make up the vast majority of our Scope 3 inventory.

Following GHG Protocol and IPIECA guidance, we use an operational control approach, consistent with our Scope 1 and Scope 2 accounting, to determine Scope 3 emissions. Following this approach, Pioneer’s Scope 3 GHG emissions for categories 9, 10 and 11 are estimated to be 149.0 million tonnes CO₂e in 2021. We estimate these categories comprise approximately 98% of our total Scope 3 emissions.

Scope 3 Emissions Categories	Million Metric Tonnes CO ₂ e
9 – Downstream Transportation and Distribution	11.1
10 – Processing of Sold Products	25.9
11– Use of Sold Products	112.0

Evaluating a company’s Scope 3 emissions can be challenging due to inconsistent reporting methodologies, potential duplication and the inaccuracies that may occur when estimating emissions that are the result of activities not owned by the reporting organization. Pioneer engaged the services of a leading environmental consultant to advise on best practices in quantifying Scope 3 emissions. Because Pioneer’s influence over Scope 3 emissions is extremely limited, we exclude these emissions from our intensity targets. Nonetheless, Pioneer is taking the following steps to reduce global greenhouse gas emissions:

- Collaborating with industry peers to promote alignment on climate policies, such as the elimination of routine flaring and increased field electrification
- Investing in select energy transition technologies that drive efficiency and support future emissions reductions

- Incorporating ESG data into our supplier onboarding process, helping us identify business partners whose core values align with our own

In addition, Pioneer’s Scope 3 emissions are Scope 1 and Scope 2 emissions of other entities who (like Pioneer) are committed to reduce those emissions over time. Additional details on Scope 3 emissions are provided in Methodologies and Definitions.

Water Management

Water is essential to hydrocarbon production, since it is needed to carry out hydraulic fracturing— the process by which large quantities of water are pumped into a wellbore to enlarge fractures in rock and extract hydrocarbons. This is the main way Pioneer extracts oil and gas in the Permian Basin. Therefore, it is important to carefully manage water availability in the Permian Basin at both the sourcing and production stages of development. Pioneer prioritizes careful water management and has a dedicated team of experts who have led the company’s innovative water management initiatives since 2014.

Water shortages in West Texas, whether due to drought or competition for resources, could significantly affect our operations, since we develop horizontal wells using hydraulic fracturing. The potential drought conditions in Pioneer’s operating areas pose a risk since it could decrease groundwater availability. For that reason, Pioneer is dedicated to limit its use of freshwater in its operations.

Freshwater Use Reduction Target

At Pioneer, we are committed to maximizing our use of non-freshwater sources, which minimizes our use of freshwater, in order to reduce our impact on the freshwater resources in the Permian Basin. As part of this goal, we set a new, more aggressive **target to reduce our freshwater usage to 20% or less of total completions operations by the end of 2026**. Using produced water for hydraulic fracturing is the most effective way to preserve groundwater resources and minimize the need for disposal. Therefore, we are prioritizing the reuse of produced water above other sources as much as possible.

Our reporting includes use of freshwater in both drilling and completion operations; however, our freshwater usage reduction target is focused on the use of freshwater within our completions operations. We are also actively pursuing methods of reducing freshwater use in stages of drilling operations consistent with regulatory requirements. Best practices require the use of freshwater when drilling through shallow zones to protect groundwater resources. Therefore, Pioneer is limited in its ability to reduce freshwater usage in drilling operations.

Our freshwater reduction targets are supported by our actions, which include:

- Investing in infrastructure that allows us to better utilize non-freshwater sources, including produced water and reclaimed water from the cities of Midland and Odessa
- Avoiding use of surface water resources
- Continuously monitoring our production and consumption of groundwater
- Maximizing recycled, reclaimed and non-freshwater resources in our operations

Reducing Freshwater

Pioneer has experience with many technologies for recycling water, ranging from desalination to minimal treatment techniques, to avoid using freshwater for hydraulic fracturing. Thanks to advances in technology, hydraulic fracturing can now be carried out using 100% recycled water instead of freshwater.

Pioneer has prioritized its water sources using the following tiers:

- Tier 1— Recycled Water (Most Sustainable)
- Tier 2— Reclaimed Water
- Tier 3— Brackish Groundwater
- Tier 4— Fresh Groundwater (2026 Reduction Target)
- Not used— Surface freshwater

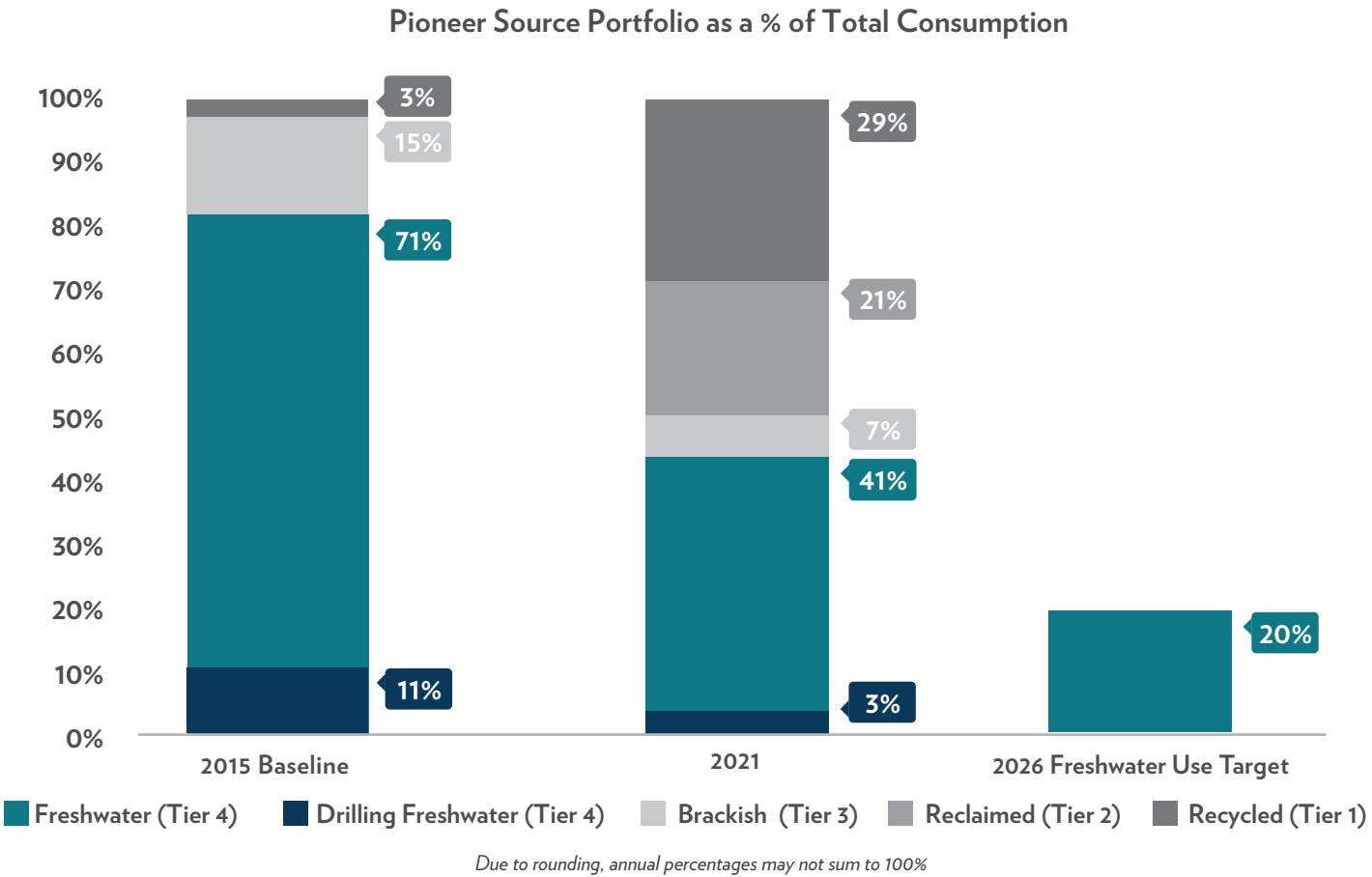
Each type of water is ranked by priority, with Tier 1 representing the highest priority after considering our commitments to limited utilization of freshwater, cost and efficiency of operations and the parameters of Pioneer’s water distribution system. Further details on our water management strategy and related freshwater use reduction measures can be found in our *Sustainability Report*.

Progress Toward Our Freshwater Use Reduction Target

Our ability to decrease our freshwater sourcing as a percent of total consumption to 41% provides evidence that the company’s water utilization strategy is effective and viable. With Pioneer under an exclusive contract to secure reclaimed water from the West Texas cities of Odessa and Midland, combined with the continued development of our produced water reuse strategy, we believe we are well positioned to reduce our freshwater sourcing as a percent of total consumption to 20% by the end of 2026.



Pioneer has completed wells using only recycled produced water and continues to do so where feasible. A key driver for our freshwater reduction target is our mainline water supply infrastructure, where our goal is to operate with as close to 100% non-freshwater sourcing as possible. Our mainline infrastructure provides us with strategic flexibility to move our recycled and reclaimed sources over long distances to support our freshwater reduction goals.



Defining Freshwater

Total Dissolved Solids (TDS) refers to the total mineral content of the water and is a standard way to measure water quality. While many other operators define freshwater as less than 1,000 mg/L TDS or less than 2,000 mg/L TDS, Pioneer defines freshwater using a more stringent standard of less than 3,000 mg/L TDS. While we recognize the 1,000 mg/L TDS is sometimes suitable, this limit does not realistically capture how water is used in the Permian Basin. Much of the Permian Basin depends on lower quality water sources of 1,000 to 3,000 mg/L TDS for local agricultural irrigation, ranching and drinking water desalinization consumption.

Therefore, we have adopted this stringent threshold to avoid using groundwater that competes with local consumption needs and to be consistent with the Texas Railroad Commission’s groundwater protection process. In the Permian Basin and other areas, it is important to broaden the definition of freshwater to include usable quality water to account for local uses in drought-prone and water-stressed areas, particularly over the long term.

Baseline Water Stress

The World Resources Institute Aqueduct Water Risk Atlas shows that, using our broader definition of freshwater, 54% of our freshwater was sourced from areas of high or extremely high baseline water stress. The other 46% was sourced from water wells in areas of low-to medium- baseline water stress.

The Importance of Properly Defining Freshwater in the Permian Basin

Water Quality (TDS mg/L)	Other Common Oil and Gas Water Disclosure Practices	Pioneer Water Disclosure Best Practice		Percentage of all Pioneer Freshwater 2020 Water Volumes**
0 - 1,000	Freshwater	Freshwater	Highest-quality freshwater; most usable	~10%
1,000 - 3,000	Brackish	Freshwater	Important for agriculture and desalinization uses in drought-prone and water-stressed areas, particularly over the long-term	~90%
3,000 - 10,000	Brackish	Brackish	Currently uneconomic for agricultural use, requires desalinization	
10,000+	Saline	Saline		

Managed Usable Quality Water Unmanaged Usable Quality Water

**This study was performed using 2020 water data to quantify and illustrate the significant difference between common TDS thresholds used when reporting water impacts.

Further evaluation, using the World Resources Institute’s Overall Water Risk weighting for the oil and gas industry indicates that our operational footprint does not contain areas of high or extremely high overall groundwater risk. We approach local water use with respect for its value and have a meaningful action plan to further reduce our use over time.

Additional details on water use metrics are provided in our **Sustainability Performance Data Table** and **Methodologies and Definitions**.

Additional Information and Assurance

Our Annual Report and financial filings include a discussion of material risks and other matters we believe are material to our investors. The term materiality, as used in this report, is not based on the definition of materiality used in U.S. securities laws. Insofar as the determination of materiality for this report is based on laws and regulations applicable to securities filings and other investor communications, the topics deemed material for sustainability reporting purposes may differ from the topics deemed material in financial reporting.

Cautionary Statement Regarding Forward-Looking Information

Except for historical information contained herein, the statements in this report are forward-looking statements that are made pursuant to the Safe Harbor Provisions of the Private Securities Litigation Reform Act of 1995. You can typically identify forward looking statements by the use of words such as “may,” “could,” “project,” “believe,” “anticipate,” “expect,” “estimate,” “potential,” “plan,” “forecast” and other similar words. In particular, this report contains forward-looking statements pertaining to, but not limited to, information with respect to the following: Pioneer’s strategic plan, priorities, outlook and expected performance; climate-related goals, strategies, priorities and initiatives, including among others, those related to greenhouse gas (GHG) emissions reduction; our plans to achieve our climate-related goals and to monitor and report our progress thereon; ESG engagement, commitments and disclosure; low carbon and new energies opportunities and strategy; and other related items. Forward-looking statements are subject to a number of risks and uncertainties that may cause Pioneer’s actual results in future periods to differ materially from the forward-looking statements. These risks and uncertainties include, among other things, volatility of commodity prices, the impact of a widespread outbreak of an illness, such as the COVID-19 pandemic, on global and U.S. economic activity; the ability to obtain environmental and other permits and the timing thereof; other government regulation or action; Pioneer’s ability to achieve its emissions reduction, flaring and other ESG goals; the assumptions underlying forecasts; and

environmental and weather risks, including the possible impacts of climate change. These and other risks are described in Pioneer’s Annual Report on Form 10-K for the year ended December 31, 2021, Quarterly Reports on Form 10-Q filed thereafter and other filings with the U.S. Securities and Exchange Commission. In addition, Pioneer may be subject to currently unforeseen risks that may have a materially adverse effect on it. Accordingly, no assurances can be given that the actual events and results will not be materially different than the anticipated results described in the forward-looking statements and readers are cautioned not to place undue reliance on any such statements. Moreover, while we have provided information on several climate related topics, there are inherent uncertainties in providing such information, due to the complexity and novelty of many methodologies established for collecting, measuring, and analyzing climate-related data. While we anticipate continuing to monitor and report on certain climate-related information, we cannot guarantee that such data will be consistent year-to-year, as methodologies and expectations continue to evolve. Pioneer undertakes no, and expressly disclaims any, duty to publicly update these statements except as required by law.

This report contains statements based on hypothetical or severely adverse scenarios and assumptions, and these statements should not necessarily be viewed as being representative of expected risk. While future events discussed in this report may be significant, any significance should not be read as necessarily rising to the level of materiality of the disclosures required under the U.S. federal securities laws.

Assurance

Pioneer conducted an internal audit of this report to ensure whether subject matter experts in each department provided adequate supporting documentation that substantiates the information disclosed. A comprehensive analysis was presented to the ESG Task Force, the Audit Committee and the SCOC at the end of the reporting process. The select members of the ESG Task Force then approved the publication of this Climate Risk Report.

As detailed in the ERM CVS Assurance Statement appended to our 2022 Sustainability Report, Pioneer secured limited assurance on selected Scope 1 and Scope 2 GHG emissions data. ERM CVS has evaluated the data and provided limited assurance that it is fairly presented in Pioneer’s 2022 Sustainability Report. ERM CVS’s methodology was based on the International Standard on Assurance Engagements ISAE 3000. Therefore, the same selected Scope 1 and Scope 2 GHG emissions data have been presented in the same manner and context within this report.