



Managing Climate-Related Risk

Guided by our long-standing ERM program, Chesapeake takes a methodical approach to identifying, assessing and managing ESG risks, including climate-related risks. Risk identification is the responsibility of all Chesapeake team members according to our Three Lines of Defense model, with several teams specifically tasked with recognizing and managing risks related to climate change.

Three Lines of Defense Model		
1st Line of Defense <i>Operational and service groups</i>	2nd Line of Defense <i>Internal Controls team</i>	3rd Line of Defense <i>Internal Audit team</i>
Identify and control risk at the front lines of the organization	Provides impartial enterprise risk and compliance analyses	Uses a standardized, objective process to identify risk-based audits of department and business unit controls and processes; reports directly to the Board's Audit Committee

Understanding ERM

Through ERM, internal risk owners identify, review and assess the company's risks. These risks are then linked to core ESG categories and regularly reviewed at the executive level to ensure strategy alignment and responsive risk mitigation.

The Board's Audit Committee also reviews pertinent risks and mitigation plans at least quarterly through our ERM process. This reporting allows the Board to analyze the company's material risks and direct business strategies accordingly.

Assessing Emerging Risks

On an annual basis, all leaders within the organization participate in risk surveys to review current risk drivers and identify any emerging risks. The ERM team also performs subject matter expert interviews across the organization to assure a comprehensive process for risk identification.

When identifying enterprise-wide risks, we measure severity based on four characteristics. This process helps to ensure company alignment on risk priority.

If a risk requires mitigation, we develop and execute plans to reduce the risk to an acceptable level. While risk identification and management is the focus for this process, we also consider opportunities for the organization to take advantage of as we transition to a lower carbon energy future.

Risk Measurement Characteristics

Impact	Likelihood	Velocity	Response Maturity
Expected effects	Potential for risk to occur	Speed of impact	Evaluation of controls and response plan in place to mitigate risk

Identifying Climate Risks

Through our ERM process, we have identified climate-related risks that could impact our business. TCFD separates these risks into two primary categories: transition (risks associated with transitioning to a lower carbon economy) and physical (risks specific to the physical impacts of climate change).

For the purposes of this report, we categorize climate-related risks according to the below timelines.

Defining Risk Horizons



Risk	Impact	Potential Timing	Mitigation Strategies
Policy and Legal	Increased operating costs due to stricter controls, taxes or carbon pricing	Short- to Medium-term	<u>Policy engagement</u> , <u>emissions reduction practices</u> , new technology adoption
Technology	Reduced demand for our product due to renewable energy sources	Medium- to Long-term	New Energy Ventures team, research and capital deployment for alternative energy solutions, <u>emissions reduction practices</u> and operational efficiencies
Market	Depressed prices affecting our financial performance	Medium- to Long-term	Market sensitivity analysis, diversified portfolio, <u>RSG</u> as market differentiator, hedging activity
Reputation	Negative corporate reputation perception, loss of access to capital and increased stakeholder activism	Short- to Medium-term	<u>Emissions reduction practices</u> , <u>stakeholder engagement</u> and reporting transparency, new technology adoption
Physical (Extreme Weather)	Damage to facilities, disruption of operations and/or safety incidents	Short-term and ongoing	<u>Business continuity</u> and disaster recovery planning, facility design, <u>emergency preparedness</u>

Policy and Legal Risk

As the global economy shifts to a lower carbon future, legislative and regulatory proposals could restrict or tax GHG emissions and increase our operating costs relative to obtaining permits, operating our equipment and facilities, and adopting new technology.

At the federal level, the EPA has issued regulations that require us to establish and report a prescribed inventory of GHG emissions. These regulations, including any new potential controls on methane or carbon dioxide emissions, could expand because of goals set forth in the Paris Agreement. States may also pursue the issue directly or indirectly, enacting localized regulations governing or restricting GHG emissions.

Mitigation: We manage our policy and legal risk by collaborating with policy makers, complying with regulatory requirements, supporting science-based research and adopting innovative technologies to reduce our footprint.

Policy Engagement

Through our policy engagement, we collaborate with stakeholders to develop policies that meet mutually beneficial environmental goals. We define sound policy as regulations that are based on scientific research and remain effective and equitable across regulated industries. Regulations should also recognize the expected growth and need for modern, affordable energy, as well as the continued technological and innovative advancements of our industry.

Our focus is collaborative, which is why we work with trade associations and other organizations to partner with governmental agencies in developing regulations. We endorse both API and AXPC's Climate Policy and Principles as a guide for our climate advocacy efforts, and support policy that facilitates meaningful GHG emissions reductions; balances economic, environmental and energy security needs; and promotes innovation.

Research

We continue to partner with universities and other institutions to support scientific research that enhances our understanding of GHG emissions and climate change. Our most recent partnerships have focused on the study of methane detection and reduction.

Innovation

To meet regulatory requirements and voluntarily reduce emissions, we've adopted a number of innovative technologies to better detect emissions and prevent leaks or loss. Some of these technologies include continuous methane emission sensors, pneumatic retrofits, aerial methane detection, a comprehensive leak detection and repair (LDAR) program with OGI cameras and our [WellTender mobile app](#).

Technology Risk

As our economy shifts to lower carbon resources, emerging technologies could displace or affect the competitiveness of more traditional energy and reduce consumer demand.

Mitigation: We continue to study and adopt emerging technologies and commercial solutions to increase our operational efficiencies and reduce our GHG emissions to be most competitive in a lower carbon future.

New Energy Ventures Team and Business Development

Led by our Geoscience head, our New Energy Ventures team (in collaboration with Business Development) explores emerging technologies and commercial solutions to support our emissions reduction efforts and help us capitalize on a lower carbon future. We're targeting investment opportunities that are adjacent to our core business and offer new ways for Chesapeake to enhance our strategies and diversify our portfolio. These opportunities include, but are not limited to: geothermal, carbon capture, utilization and storage (CCUS), carbon capture and storage (CCS) and additional energy sources derived from natural gas including blue hydrogen and blue ammonia.

Operational and Cost Efficiencies

We are mitigating emissions while reducing our cash costs and decreasing cycle times. Our well productivity continues to increase as a result of enhanced operational efficiencies allowing us greater flexibility in the changing energy landscape

We are also adopting facility design improvements to reduce emissions at various points across our sites. For example, we are removing venting from our pneumatic devices and capturing flash gas from oil plays by adopting different technologies. We are also trialing a new facility design that includes condensate stabilizers to reduce tank flaring.

Reputation Risk

Market and social pressures related to the transition to lower carbon energy may result in increased reputational risks for our industry and decreased access to capital. In particular, poor ESG performance may lead to subpar ratings from organizations that track ESG-related performance, impacting investment recommendations and actions by key investors, analysts and stakeholders. Negative ESG publicity may also affect public sentiment and, in turn, a company's social license to operate.

Mitigation: We're committed to transparent stakeholder engagement and forward-looking programs that promote ESG excellence.

Stakeholder Engagement

Through regular engagement, complemented by active listening, we respond to stakeholder concerns and continue to improve our operations.

Reporting Transparency

Each year we evolve and enhance our sustainability reporting to drive greater transparency. We consult with an independent, third-party organization to review and verify our GHG intensity, methane intensity, TRIR and spills metrics. This added layer of accountability provides assurance for our highest-profile ESG performance metrics.

We're also participating in industry efforts to standardize ESG reporting, particularly related to emissions, and increasing our communications to key stakeholders about our reporting. We commit to reporting our ESG performance at least annually, providing progress on our climate-related pledges to reach net zero GHG emissions (Scope 1 and 2) by 2035.

Proactive ESG-focused Programs

To meet our climate-related pledges, we continue to build upon our emissions reduction practices and adopt new ESG programs. One example is our commitment to pursue RSG certification in our two natural gas basins. This independent certification verifies that our gas was produced to the highest ESG standards, meeting strict emissions requirements, among a number of additional factors. RSG also provides additional data assurance as part of the certification process.

Market Risk

The demand for oil and natural gas could be negatively impacted by regulatory or market incentives to conserve energy or use alternative energy sources in combating climate change. Lower demand for our products could temporarily or permanently reduce pricing should a significant share of energy reliance shift to other sources.

Mitigation: Long-range planning and strategic financial analysis, coupled with our diverse portfolio, allow us to reduce market volatility risk.

Market Analysis	Hedging	Diversified Portfolio
<p>At least quarterly we conduct market sensitivity analysis during which we evaluate our operational strategy and business portfolio against a number of market factors that could impact company performance based on product demand and pricing effects. Should a scenario show an enhanced risk, we develop a targeted mitigation plan.</p>	<p>We strategically protect our capital program by using hedging to offset downside risk. By locking in future market prices, we protect our capital program and affiliated revenue should there be a dip in demand or a significant negative shift in oil and natural gas pricing.</p>	<p>Our diverse portfolio allows us to shift to the most profitable asset based on changes in market demand. By having both oil and natural gas assets in basins across the U.S., we can better react to market volatility.</p>

Physical Risk

Climate change may produce global physical effects, such as higher sea levels, increased frequency and severity of storms, droughts, floods and other extreme weather events. If any of these effects occur in our operating areas, we could experience incidents at our sites, including safety or environmental concerns, downtime or damaged equipment. Our operational resources could also become limited or disrupted, affecting our production and financial performance.

Mitigation: Through the adoption of advanced technology, stringent processes to promote operational resilience and emergency preparedness, we protect our sites against physical risks.

Facility Design	Emergency Response Planning	Business Continuity
<p>Our facility design standards require several elements to protect our operational equipment from extreme weather-related events. Some of these elements include the installation of catenary protection systems to reduce the risks of lightning strikes; cables anchoring tanks to concrete bases for protection during flooding; operational weatherization measures to protect against freezing temperatures; elevated berms for secondary containment if a spill occurs; and solar panels to power remote monitoring and shutdown capabilities if other power is lost.</p>	<p>Should extreme weather cause an emergency at one of our sites, our Emergency Response Plan (ERP) provides employees with the framework and action steps critical for responding to incidents in a safe, effective and efficient manner.</p>	<p>While it's our goal to continue operations during an emergency, sometimes we must temporarily shut down a site or facility. If an emergency requires a prolonged closure, we utilize our business continuity and disaster recovery process to maintain critical operations. Our recovery team assesses the business impacts of certain risks, including extreme weather, and develops enterprise response and recovery plans to reduce potential associated impacts. These plans can include arranging alternate workspace, providing a secondary power source, or engaging with employees outside of our standard communication channels.</p>

Climate-Related Opportunities

Embracing a lower carbon future, while adapting to climate change, can produce opportunities for organizations. Through our nimble operating structure, emissions reduction efforts and commitment to ESG performance improvement, we are well-positioned to capitalize on climate-related opportunities and create value for both the planet and our bottom line.

Opportunity	Impact	Ongoing Activities
Resource Efficiency	Reducing operating costs due to operational efficiencies and emissions reduction programs	<p>Through various operational programs, we continue to yield efficiencies in our production. These programs build upon our technical innovations that reduce our cycle times.</p> <p>We have also adopted a number of emissions reduction programs, most notably our continuous methane emissions monitoring system. This system includes more than 2,000 methane sensors, sending monitoring data to our SCADA platform and WellTender app. Should a leak be identified, the system alerts our lease operators for callout and remedy within 24 hours. Having continuous monitoring data also allows for predictive repair and maintenance.</p>
Energy Source	Shifting to lower carbon energy sources for power generation to reduce costs and emissions	<p>Across our operating areas, we have a number of alternative fuel capabilities to power our drilling, completions and production activities rather than diesel. This includes using natural gas and electricity for drilling, natural gas for completions and electricity for production. We continue to expand these capabilities, which offer both cost savings and environmental benefits.</p> <p>We also established our New Energy Ventures team to explore other potential energy sources and adopt emerging technologies for our company, including geothermal, CCUS/CCS and additional energy sources derived from natural gas including blue hydrogen and blue ammonia.</p> <p>Also, our Operation teams are exploring innovative solutions to further reduce our emissions footprint, including: adopting exhaust capture operations, using waste heat from operations to power devices, utilizing small scale solar, providing power back to the grid by capturing fugitive emissions, and creating compressed natural gas (CNG) demand both by selling gas on pad to CNG providers and piloting CNG trucks in our hauling operations.</p>
Product and Services	Focusing our portfolio on lower emissions products to maintain competitiveness	<p>Our recent A&D activity reflects our strategy of focusing on a lower emissions portfolio. In 2021 and 2022, we purchased additional natural gas assets to expand our Haynesville and Marcellus positions (acquisition of Vine and Chief, respectively).</p> <p>We are also committed to expanding RSG within our portfolio and taking advantage of our production's strategic positioning near LNG terminals to meet the growing global interest in responsibly produced fuel.</p>
Markets	Proactively leading the RSG market to better position Chesapeake for the lower carbon future	<p>We are the first company to pursue RSG certification across two major shale basins, with a goal of completion by the end of 2022.</p> <p>Not only will we have significant volumes (more than 6 bcf/d gross) of certified RSG in our portfolio, but this production is strategically positioned near LNG terminals to meet the growing global interest in responsibly produced fuel.</p> <p>We also plan to apply the innovative technology used to fulfill our RSG certification to our mixed (oil and natural gas) assets to further improve our overall environmental performance.</p>
Resilience	Developing a nimble operating structure and enhanced facility design to best respond to climate change (managing risks and seizing opportunities)	<p>With a geographically diverse portfolio and nimble operating structure, we can efficiently shift resources should a weather or climate-related emergency significantly impact one of our basins.</p> <p>We also have business continuity and emergency response resources in place to react efficiently to an acute climate change event.</p>