

The background image shows a construction site. On the left, a tall yellow crane is visible against a clear sky. In the foreground on the right, a surveyor wearing a white shirt, a yellow safety vest, and a white hard hat is using a surveying instrument mounted on a tripod. The ground is covered with construction materials and rebar. In the distance, another worker in a yellow vest and hard hat is visible near a large concrete structure.

Arch Sustainability Report

2022 Sustainability Report

We are a demonstrated leader in mine safety and environmental stewardship, with a strong corporate culture grounded in transparency, integrity, continuous improvement and good governance.

ARCH
RESOURCES

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Overview

Arch believes that its long-term success will be enhanced by achieving excellence in mine safety and environmental stewardship; conducting business in the most ethical and transparent manner; investing in its people and the communities in which it operates; and demonstrating the highest principles of corporate governance.

Arch is a demonstrated leader in mine safety, with an average lost-time incident rate during the past five years that is nearly 2.5 times better than the industry average. Arch subsidiaries have won 10 Sentinels of Safety awards — the nation's highest honor for excellence in mine safety — in the past 11 years.

In the environmental arena, Arch subsidiaries achieved a perfect compliance record in 2021, with zero notices of violation from state mining regulators. In each of the previous four years — from 2017 through 2020 — Arch received just one notice of violation, versus an average of 16 annually by 10 of its largest U.S. competitors. In the area of water management, Arch subsidiaries took more than 134,000 water quality measurements in 2021 and recorded zero exceedances for a 100 percent compliance record. That compares to just one minor and temporary exceedance in 2020, which equated to a compliance record of 99.999 percent.

In May 2021, Arch joined ResponsibleSteel™, the steel industry's first global not-for-profit multi-stakeholder standard and certification initiative. Arch is the first and only U.S. metallurgical coal producer to join the organization to date. Arch views ResponsibleSteel™ as an important forum for collaboration with its steel-making customers as they pursue a more sustainable value chain, and as they seek to lower — and ultimately reduce to zero — the carbon intensity of the steelmaking process.

Enterprise Risk Management

The evaluation and management of risk is incorporated into Arch's approach to governance and risk management. Arch uses a long-standing Enterprise Risk Management (ERM) process to assess risks that may affect the company's ability to achieve its strategic and financial goals. The ERM process, which is overseen by the company's board of directors and administered by senior management, cultivates a risk-aware corporate culture at Arch.

Our objective for environmental, social, and governance (ESG) performance is to work towards positive outcomes for our business and stakeholders. Our process for integrating risk management throughout the business includes identifying, evaluating and addressing ESG risks and opportunities on a regular basis. The risks and impacts associated with our business require effective collaboration among departments, business units and external stakeholders.

Because the company's environmental and operational activities are inextricably intertwined, our chief operating officer acts as our environmental lead with the assistance and support of the company's entire operational and environmental leadership teams. The chief operating officer reports directly to the chief

executive officer, who provides further oversight and direction in this critical area of performance, and both the chief operating officer and the chief executive officer report to the board of directors on critical areas of environmental performance and on key environmental metrics, at a minimum, as a part of every regularly scheduled board meeting. Our senior vice president of strategy leads the company's broader ESG efforts, reports directly to the CEO, and reports to the board of directors and the ESG and Nominating Committee of the board on a regular basis.

Compliance Management System

For more than a decade, Arch has been operating in conformance with a Compliance Management System (CMS) that was modeled after the ISO 14001 Environmental Management System standard and that met EPA's rigorous expectations for the company's compliance assurance program. Under our CMS, we require each subsidiary facility to maintain full compliance with all applicable environmental regulations and to monitor that performance in alignment with the "management plan" model of Plan/Do/Check/Act. Each operation regularly reviews its applicable regulatory framework and its environmental operating risks, ranks those risks and mitigates accordingly. Each operation regularly performs self-evaluations of compliance performance, and those self-evaluations are supplemented by corporate environmental compliance and third-party audits, undertaken to minimize the risk of noncompliance and environmental harm. The CMS has built-in measures to drive continuous improvement, with emphasis on risk reduction and environmental performance improvement.

Annual environmental improvement plans are developed by each facility and incentives for outstanding environmental compliance performance are awarded. Underpinning the overall environmental program, Arch utilizes an industry-leading environmental management information system (EMIS) to assist in managing and tracking environmental data; compliance obligations; audit findings and corrective actions; and regular internal reporting of environmental activities. Arch continues to build out the capabilities of its EMIS to improve the efficiency of compliance assurance and to reduce risks of environmental harm.

All of our mining operations maintain Environmental Management Systems (EMS) that align to ISO 14001:2015. We continue to evaluate the potential future certification of our environmental management systems to conform to the internationally recognized ISO 14001 standard.

Third-Party Oversight

Arch dedicates significant operational resources to all aspects of environmental compliance assurance and risk management in an effort to enable environmental regulations to be fully addressed and to enable environmental resources to be protected. Beyond daily attention to such details, Arch engages third-party experts to review the work of our operations in order to provide additional, external assurance that the practices and compliance measures we employ are accurate and reflective of industry standards and best practices.

Examples of operational areas to which Arch applies regular third-party review and assurance include:

- Design, construction, operation, maintenance and monitoring of refuse management areas, including both slurry impoundments and dry piles
- Design, construction, operation, maintenance and monitoring of refuse slurry pipeline systems
- Deployment and implementation of the Arch Resources Environmental Management System

Each year, Arch retains a third-party consultant to conduct an extensive and comprehensive review of its operating, safety and environmental practices. In each of the past two years, Arch retained Hawcroft Consulting International Group — a leading global loss control engineering firm for the mining industry — to conduct this audit at each of the company's subsidiary operations. While the results were highly positive, the extensive individual mine reports — which typically exceeded 100 pages — identified multiple opportunities for improvement. Arch and its operating subsidiaries have put these recommendations to use in making enhancements to their critical operating, safety and environmental processes, in keeping with the organization's disciplined commitment to continuous improvement.

In addition to third-party audits, each facility is continuously subject to regulatory inspections, with regulators such as the U.S. Department of Labor's Mine Safety & Health Administration (MSHA), which has inspectors at each of our mines on an almost daily basis. In 2021, Arch's operations were subject to 2,164 inspections shifts by MSHA.

State regulators overseeing the federally delegated Surface Mining Control and Reclamation Act (SMCRA) programs are required by regulation to perform monthly inspections at a minimum, but many of our facilities have weekly or even more frequent inspections. Arch Resources maintains one of the best SMCRA compliance records in the industry, with zero violations in 2021 and only one violation across the entirety of the company in each of the previous four years. In 2021, Arch's operations were subject to 1,259 inspections by federal and state inspectors.

Other federal and state regulators randomly perform compliance and oversight inspections, including regulatory inspections required under the Clean Air Act (air permits), the Clean Water Act (NPDES permits) and the Resource Conservation & Recovery Act (waste management), as well as inspections required by the U.S. Nuclear Regulatory Commission (nuclear sources) and the U.S. Alcohol, Tobacco, Firearms and Explosives agency (explosives management). In addition, Arch operations routinely conduct inspections with state fire marshals and local and regional emergency response coordinators, and conduct mine disaster drills at select operations.

Arch maintains its diligence on all matters of environmental and safety management by performing corporate compliance and best management audits across all subsidiary facilities. The corporate functional management team provides both the guidance on requirements for full compliance, and periodically makes site visits to review practices; documentation and recordkeeping; and external reporting. All of these external oversight efforts are welcomed and encouraged by our subsidiary facilities and management teams, who recognize that additional eyes and expertise engaged in reviewing our practices and compliance efforts act to further reduce risk and to maintain diligence in protecting the environment.

Arch has been engaged in and achieving industry-leading performance around ESG principles for years. As early as 2017, one of our major customers, pursuant to its own ESG program initiatives, arranged to have a third-party assurance consultant (Intertek) visit one of our subsidiary operation's mines — Beckley — to perform a workplace conditions assessment, as part of a sampling of its upstream vendors. Upon completion of its review, Intertek assigned a score of 100 percent to the Beckley mine, and reported to the Arch team that it had never previously issued a score of 100 percent to another operation.

ESG Highlights

Serving the steel-intensive needs of a decarbonizing world, sustainably and responsibly.

ENVIRONMENTAL



Arch's metallurgical products are **essential to the production of new steel**, which in turn is essential to the construction of a new, low-carbon economy.

Steel is pivotal to global decarbonization efforts, including sustainable urban design, infrastructure replacement and the construction of mass transit systems, wind turbines and electric vehicles.



60% ↓

Since 2010, Arch subsidiaries have reduced their annual thermal coal production by nearly 60 percent, which has driven a 56 percent reduction in Scope 1 and Scope 2 CO₂e emissions over that timeframe.



Arch has undertaken a strategic, **ESG-driven pivot towards global steel and metallurgical markets** and away from domestic power and thermal markets over the past decade.

As part of its strategic pivot, Arch is also transitioning towards underground mining, with its more limited environmental footprint and land usage, while systematically reducing surface mining activities.

Arch is the first and only U.S. metallurgical coal supplier to join ResponsibleSteel™, a global steel industry certification initiative focused on building an increasingly sustainable steel value chain.





Arch has planted **2.7 million indigenous trees** on reclaimed land in the past decade.

Arch recently established an **industry-first thermal mine reclamation fund** to ensure that long-term funding is available for the reclamation and closure obligations at its Powder River Basin operations.



Arch has actively reclaimed former mine sites in the eastern U.S., which is evident in the greater than 50 percent reduction in long-term holding costs for these properties since 2017.

26K

Arch's subsidiary operations have restored **more than 26,000 acres of mined lands** since 2016.

During 2021, Arch subsidiaries achieved a **100 percent compliance record for water quality management**, with zero exceedances against more than 134,000 parameters measured.



In 2021, Arch subsidiaries achieved a **perfect environmental compliance record**, as measured by SMCRA violations.

42%

In 2021, Arch subsidiaries recycled **nearly two billion gallons of water** – equivalent to 42 percent of total water usage – thus avoiding drawing a commensurate amount of new gallons from water sources.

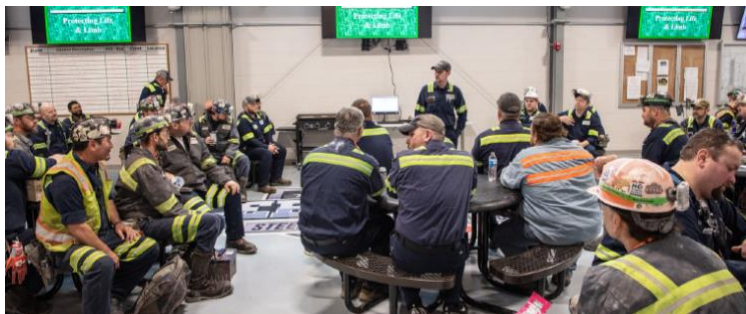
Since 2010, Arch subsidiaries have claimed one of the top national awards for reclamation excellence and community engagement – the **National Reclamation and Good Neighbor awards** – seven times.

SOCIAL

10

Arch subsidiary operations have won a total of **10 Sentinels of Safety awards** – the nation’s highest honor for excellence in mine safety – during the past 11 years.

During the past five years, **Arch has averaged 0.94 lost-time incidents per 200,000 employee-hours worked**, versus an industry average of 2.25.



Arch employees engage in a **proactive, behavior-based approach to safety**, which has helped the organization consistently lead its large, integrated peers in safety performance.

The leadership at Arch’s flagship metallurgical mines meet quarterly with **Arch-established community advisory panels (CAPs)** comprised of business leaders, educators, first responders, and elected officials.

Arch’s subsidiary operations provide some of the **highest wage jobs in their operating regions**, with median annual earnings of more than \$108,000 and a highly competitive benefits package.



93%

Arch’s responsible and respectful culture has helped it attract an experienced, talented and high-performing workforce with an average **voluntary retention rate of 93 percent over the past five years**.

Arch’s subsidiary operations have **recorded approximately 1.75 million safety observations** since launching the behavior-based safety program in 2007.

Every employee of Arch and its operating subsidiaries receives the Code of Business Conduct, and all **salaried employees are expected to complete annual online training** on its contents.

Arch requires suppliers to conduct business in the same ethical and responsible manner it requires of its own employees, and stipulates these requirements via its **Supplier Code of Conduct**.

Arch C.A.R.E.S. further reinforces the company’s ongoing **efforts to ensure a safe and respectful work environment**.

GOVERNANCE

Arch believes that **strong corporate governance policies and practices are the foundation of a well-functioning board** and are vital to preserving the trust of stakeholders.



The Arch board meets in executive session — with only independent directors in attendance — on a regular basis, and conducts annual self-evaluations at both the full board and committee levels.

The board provides critical oversight of the corporation's comprehensive and robust enterprise risk management (ERM) system — including climate-related risks and opportunities — and is committed to setting the tone at the top on environmental, social and governance (ESG) matters.



In 2021, the Arch board took steps to enhance its ESG governance framework — including via the creation of a new ESG and Nominating Committee — to gain efficiencies and re-emphasize the board's commitment to continuous improvement in ESG.

Arch utilizes an industry-leading environmental management information system (EMIS) to assist in managing and tracking environmental data; compliance obligations; audit findings and corrective actions; and regular internal reporting of environmental activities.



Arch regularly conducts shareholder outreach on matters such as executive compensation, corporate governance and ESG responsibility, and takes action on key learnings related to this outreach.



Arch strengthened and enhanced the diversity of its board in early 2022 with the election of Molly P. Zhang following an extensive search aimed at identifying and recruiting highly qualified women and individuals from ethnically diverse groups.



ENVIRONMENTAL

Our Approach to Climate

Arch recognizes the importance of reducing greenhouse gas emissions on a systematic and sustained basis, and has taken significant steps in recent years to reduce its carbon footprint. The company's pivot towards steel markets — and towards higher quality but lower volume metallurgical products — has driven significant reductions in its emissions profile as well.

Arch believes that the accelerating global effort to combat climate change and to build a low-carbon economy is creating — and will continue to create — significant, value-enhancing opportunities for smart, well-positioned resource providers. In keeping with this longstanding view, Arch initiated a strategic pivot more than a decade ago with the objective of intensifying our focus on steel and metallurgical markets, which we believe will be significant beneficiaries of global de-carbonization efforts. We believe that a significant amount of new steel will be required in a de-carbonizing world, given steel's importance in sustainable urban design, infrastructure replacement and the construction of essential de-carbonization tools such as mass transit systems, wind turbines and electric vehicles. We also believe that Arch is exceptionally well-positioned to capitalize on this expected growth in global steel demand, given our extensive reserves of high-quality metallurgical coal, which is an essential input in the production of new steel; our large, modern and efficient metallurgical mines; and our deep expertise in the mining, marketing and transportation of coal products. We project that we will generate approximately 80 percent of our cash flows from our metallurgical business during the next five years, and an ever-larger percentage over time.

Arch's strategic pivot is also acting to mitigate our principal climate-related risk — the world's shift away from thermal coal as a primary source of power generation. As we have expanded our metallurgical portfolio, we have correspondingly reduced our thermal coal asset base via asset sales, mine closures and the continuous streamlining and rightsizing of our thermal portfolio. Over the past decade, we have reduced our thermal coal output by 60 percent — from 163 million tons sold in 2010 to 66 million tons sold in 2021 — and continue to drive forward with further reductions. Recently, Arch announced plans to explore strategic alternatives for our remaining thermal assets, while accelerating final reclamation activities at our thermal coal operations in the Powder River Basin of Wyoming. As part of this latter effort, we completed nearly 60 percent of the final reclamation work at our Coal Creek mine during 2021. At the same time, we are continuing to focus on optimizing cash flows from our remaining thermal assets, and to use a portion of this cash to pre-fund our final closure obligations via what we believe to be an industry-first thermal mine reclamation fund. Based on current projections, Arch expects to pre-fund at least 80 percent of its total PRB asset retirement obligation (ARO) by year-end 2022, and 100 percent of the ARO at the Black Thunder mine. The systematic, market-driven wind-down of our thermal operations provides key stakeholders — including employees, coal communities and economically sensitive power consumers — the time they need to adjust to a changing landscape.

In May 2021, Arch joined ResponsibleSteel™, the steel industry's first global not-for-profit multi-stakeholder standard and certification initiative. Arch is the first and only U.S. metallurgical coal producer to join the organization to date.

Near-Term Climate Strategy: In keeping with Arch's strategic pivot, we have built — and continue to expand — a world-class metallurgical coal franchise, fueled in large part with cash generated from our legacy thermal assets. During the past 22 quarters, we have generated nearly \$900 million more in cash than we have invested in maintenance capital at our thermal mines, and have directed much of that excess cash to the buildout of our metallurgical portfolio. Since the fourth quarter of 2016, Arch has directed nearly 90 percent of our total capital spending to our metallurgical segment. We recently commissioned another world-class longwall mine, Leer South, on our high-quality Leer metallurgical reserves in northern West Virginia, at a total investment of approximately \$400 million. In support of this buildout of our metallurgical franchise, we have focused intensively in recent years on building a robust customer base in the international arena, including Asia, where new steel production and demand is expected to be greatest.

Given that high-quality metallurgical coal is more valuable than thermal coal, Arch expects to produce far less coal in our new configuration, but to generate significantly greater value for our stakeholders. In short, Arch is transitioning from a supplier of higher-volume, lower-value thermal products, to a supplier of higher-value, lower-volume metallurgical products. In addition, Arch's core metallurgical mine portfolio consists exclusively of underground mines, which rely on electricity as their principal energy source, in contrast to our thermal operations, which are largely surface mines that rely principally on diesel fuel. Consequently, Arch's energy usage will become increasingly climate-compatible as the U.S. power system continues its shift to renewable and other low-carbon resources. In keeping with these developments, Arch's Scope 1 and Scope 2 emissions have declined by an estimated 56 percent or more over the course of the past eight years, and should decline further — and at a rapid pace — over the coming decade.

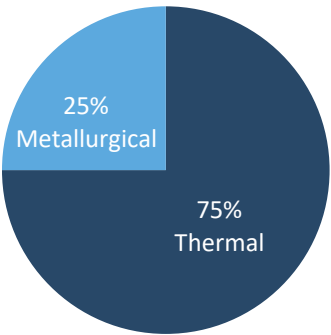
Medium-Term Climate Strategy: Importantly, Arch is focusing on premium-quality products as we build out our metallurgical portfolio, with approximately 90 percent of our total metallurgical coal output consisting of high-quality High-Vol A and Low-Vol metallurgical coals. That's significant for multiple reasons, including the fact that the use of premium-quality metallurgical coal supports a more efficient steel-making process, which — in turn — lowers the carbon dioxide-equivalent emissions from that process. Arch plans to maintain this focus on high-quality metallurgical coals, and expects the value of such coals to continue to grow as requirements for de-carbonization intensify. In short, we believe our premium metallurgical product slate represents a significant competitive advantage today, and that it will represent an even greater competitive advantage in the future, as steel-makers pursue incremental reductions in their CO₂-equivalent emissions.

Long-Term Climate Strategy: While incremental reductions in CO₂-equivalent emissions will be critical in the intermediate term, we believe steel producers will need to de-carbonize the steel-making process entirely in time, in keeping with the requirements of a net zero economy. Given the significant amount of integrated steelmaking infrastructure already in place around the globe — as well as the current lack of commercially available low-carbon steel-making solutions — Arch expects metallurgical coal to play an essential role in new steel production for the next several decades or more, which is consistent with the steel industry's consensus view. At the same time, we are exploring ways in which we can support — and participate in — the development of increasingly low-carbon and ultimately zero carbon steels. Moreover, we believe that maintaining a sophisticated understanding of the pace and shape of steel technology advances will facilitate smart decision-making surrounding our future capital deployment, including reducing the likelihood of stranded investments. Importantly, we also believe such engagement will help to prepare Arch for the next strategic pivot when the time comes.

Arch’s transition towards steel markets, which are expected to play a pivotal role in global de-carbonization efforts, is the driving force behind its long-term financial strategy. Over the course of the past decade, Arch has allocated the vast majority of its capital spending budget to its metallurgical portfolio. In the process, that portfolio has expanded to providing a projected 80 percent of the company’s EBITDA on average, versus just 25 percent in 2010. With our parallel efforts to identify strategic alternatives for our thermal assets or to execute an accelerated wind-down of those assets, we expect the metallurgical portfolio to approach 100 percent of our EBITDA generation over time.

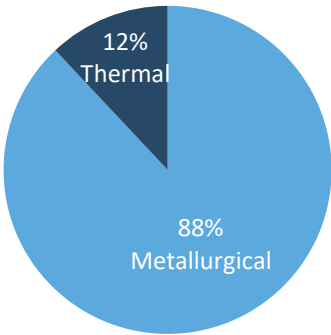


Estimated 2010 EBITDA Breakout
(by coal type)



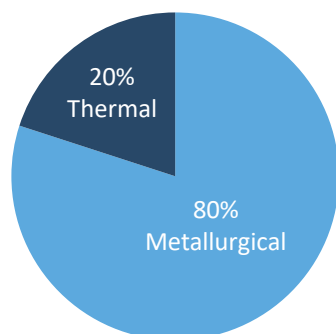
In 2010, Arch’s metallurgical segment furnished approximately 25 percent of cash generation

Arch Capital Spending
(percent by segment, since Q4 2016)



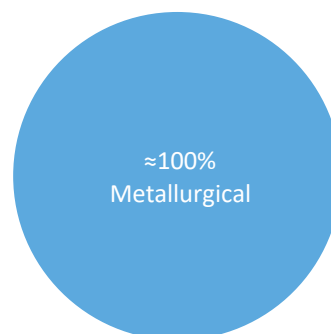
Arch will continue to direct the vast majority of its capital budget to its core metallurgical segment

Segment-Level EBITDA Breakout
(by coal type, on an estimated basis
for 2022-2026)



Arch's metallurgical segment is projected to provide approximately 80 percent of segment-level EBITDA in the five-year period from 2022-2026

Targeted Intermediate-Term EBITDA Breakout
(by coal type)



Arch is executing a rapid transition towards becoming a pure-play metallurgical coal producer

Declining Greenhouse Gas Emissions

56%

**Reduction in greenhouse
gas emissions**

*Significant reductions across
the operating portfolio of
Arch and its subsidiaries
since 2013*

Reducing Energy Intensity

In addition to the structural shift in our business strategy, our operating subsidiaries are sharply focused on reducing energy intensity. Every one of our subsidiary mining operations has an on-site rail-loading facility that allows for the movement of their products to their customer base in a highly energy-efficient manner. In addition, Arch's Wyoming subsidiary makes extensive use of capital-intensive conveyor systems to reduce truck haul distances, which in turn reduces both energy consumption and diesel requirements. In total, Arch's

Wyoming operations produce products that provide 200 times more energy than is consumed in the mining process.

Arch's core metallurgical business segment is comprised of large underground mines that rely principally on electricity as their energy source. In each instance, the primary production equipment at these subsidiary operations — as well as the preparation and loading facilities — are electric-powered.

As part of their overall efficiency efforts, Arch subsidiaries employ a variety of electric demand management tools and equipment to reduce their need to draw electric power from the grid. These efforts include the use of variable frequency drives (VFDs) on large-capacity and electric motor-driven equipment; power correction capacitors; voltage regulators; and demand timing measures.

The use of variable frequency drives (VFDs) on belt conveyors, pressure pumps and mine fans allows motor torque to be matched with output demand, resulting in reduced power draw during times of reduced need. Matching output to demand reduces the overall electrical usage required to operate the mine, and reduces the mine's draw of power from the national grid.

Further, Arch subsidiaries rely on automatic-switching and power-factor-correction capacitors. These capacitors keep the mines' power factor between 95 and 96 percent, versus a more typical 88 percent. As an example of what this means from an energy savings perspective, the Leer mine's power demand for a typical month — at a 95 percent power factor — is 24,000 kVA. Without the capacitors, the kVA demand — at an 88 percent power factor — would be 25,909 kVA. In other words, the use of this technology facilitates an 8 percent reduction in power demand, and thus an 8 percent reduction in associated carbon emissions.

In 2021, Arch directed well over 95 percent of its capital spending towards its metallurgical portfolio.

Diesel Usage

After electricity, Arch's largest energy source is diesel fuel, with the company's Thunder Basin thermal subsidiary generally — and the Black Thunder mine specifically — the predominant user. Given this fact, Arch launched an initiative at Black Thunder five years ago targeting a reduction in diesel fuel use per ton of coal uncovered. Each year, Arch establishes a target for this efficiency and incents its Thunder Basin subsidiary operation to meet it. Operating practices and equipment efficiency factors are monitored and adjusted continually to drive improved operating performance. Through this effort, the Black Thunder mine has improved the efficiency of its fleet and systematically reduced its diesel use per ton of coal uncovered.

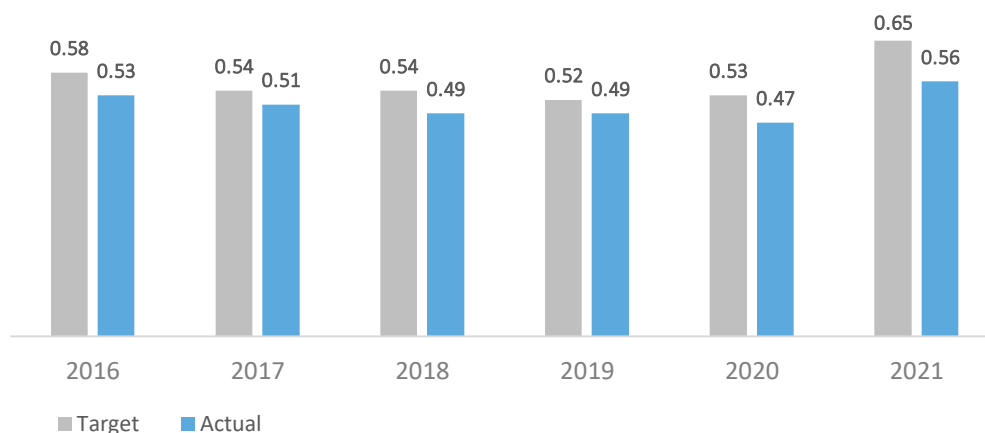
Fuel Use at Black Thunder Mine

(gallons of diesel used per ton of coal uncovered as well as total consumption)

Year	Target	Actual	Gallons (mm)
2016	0.58	0.53	35.4
2017	0.54	0.51	35.0
2018	0.54	0.49	34.3
2019	0.52	0.49	36.6
2020	0.53	0.47	27.3
2021	0.65	0.56	26.7

Fuel Use vs. Target at Black Thunder Mine

(in gallons per ton uncovered)

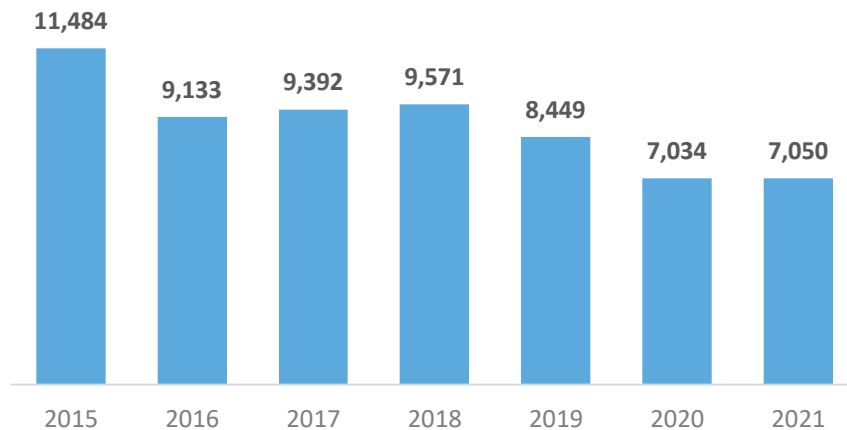


Total Energy Consumed by Arch Subsidiary Operations

Arch's subsidiary operations track the total energy they consume in mining and reclamation activities. The table below represents the total energy from both renewable and non-renewable sources and the corporate-wide trend in energy consumption. As discussed, this downward trend represents Arch's strategic pivot

toward steel and metallurgical markets, as well as its transition away from thermal coal production, which tends to rely on more energy-intensive surface mining operations.

Energy Consumed by Arch's Subsidiary Operations (in millions of mega-joules)



Arch's subsidiary operations purchase all of their electrical power from the U.S. electric grid. Our regional electricity suppliers provide regularly updated data on the percentage of power they generate using renewable sources, and Arch relies on these published numbers to quantify our mix of renewable versus non-renewable power purchases. Substantially all non-electrical energy sources used by our subsidiaries come in the form of fossil fuels consumed in the mining fleet. Arch derives none of its non-electrical energy from biofuels or other renewable liquid or solid sources.

Total Energy Consumed by Source

(renewable vs. non-renewable as a percentage, for Arch and its operating subsidiaries)

Source	2015	2016	2017	2018	2019	2020	2021
Renewable	1.5%	1.7%	1.9%	2.0%	2.8%	3.5%	3.8%
Non-Renewable	98.5%	98.3%	98.1%	98.0%	97.2%	96.5%	96.2%

Total Energy Consumed by Source

(renewable vs. non-renewable in millions of giga-joules, for Arch and its operating subsidiaries)

Source	2015	2016	2017	2018	2019	2020	2021
Renewable	179	157	176	188	233	244	269
Non-Renewable	11,527	8,983	9,219	9,391	8,220	6,803	6,781

Total Electricity Consumed by Source

(renewable vs. non-renewable as a percentage, for Arch and its operating subsidiaries)

Source	2015	2016	2017	2018	2019	2020	2021
Renewable	6.0%	6.5%	6.8%	7.0%	9.5%	10.8%	12.3%
Non-Renewable	94.0%	93.5%	93.2%	93.0%	90.5%	89.2%	87.7%

Total Electricity Consumed by Source

(renewable vs. non-renewable in thousands of megawatt-hours, for Arch and its operating subsidiaries)

Source	2015	2016	2017	2018	2019	2020	2021
Renewable	50	44	49	52	65	68	75
Non-Renewable	783	633	676	691	616	562	533

Percentage of Total Energy Consumed from Electrical Grid

(for Arch and its operating subsidiaries)

Source	2015	2016	2017	2018	2019	2020	2021
Renewable	25.6%	26.6%	27.8%	27.9%	29.0%	32.2%	31.0%
Non-Renewable	74.4%	73.4%	72.2%	72.1%	71.0%	67.8%	69.0%

As part of its ongoing transition towards steel markets and away from power markets, Arch has embarked upon a plan to systematically reduce the footprint of its subsidiary thermal operations, which will drive a corresponding reduction in the consumption of non-renewable energy corporation-wide. As discussed, our subsidiary thermal operations are principally surface mines that rely on diesel fuel as their primary energy source, versus our subsidiary metallurgical mines, which are underground and rely principally on electricity from the nation's electric grid. As a result principally of the planned, systematic wind down of our subsidiary

thermal operations, we expect to reduce our consumption of non-renewable energy sources significantly over time.

Emissions Reduction Efforts at the West Elk Mine

As an underground mine, the West Elk mine in Colorado must ventilate the mining space to reduce methane concentrations to safe levels for miners. The mine employs a combination of forced air ventilation and boreholes drilled from the surface to extract the methane from the mine works as operations progress. West Elk's intensive and focused efforts have led to a significant reduction in methane emissions over the course of the past decade.

In addition, West Elk has captured and concentrated some of the methane gas generated from within the mine for the past 10 years, utilizing it for heating the ventilation air during cold winter months. This heated air improves equipment efficiency as well as worker safety and comfort, and the combustion of the methane serves to reduce emissions significantly.

West Elk has engaged an outside specialty contractor, in coordination with the state of Colorado, to fabricate and deploy a specialized flare designed to combust the methane emitted from the boreholes. This flare reduces mine methane emissions still further through the elimination of more than 90 percent of borehole emissions. In 2021, this flare in combination with a methane-fueled mine air heating system destroyed incremental methane emissions in excess of 9,000 tons of CO₂ equivalent (CO₂e).

West Elk has also worked diligently over many years to reduce energy consumption through electrical demand and utility initiatives. These initiatives include:

- The use of capacitor banks and high voltage regulators that enable the mine to normalize the rate of energy draw from the local utility, thus improving overall energy efficiency.
- The deployment of a compressed air system and time-of-use practices, including controls that automatically shut off equipment and conveyors between system demands and during idle times.
- The installation of a blowing fan that has reduced energy requirements by approximately 33 percent.

These efforts result in a reduction in energy usage of more than 2.5 million kilowatt-hours annually.

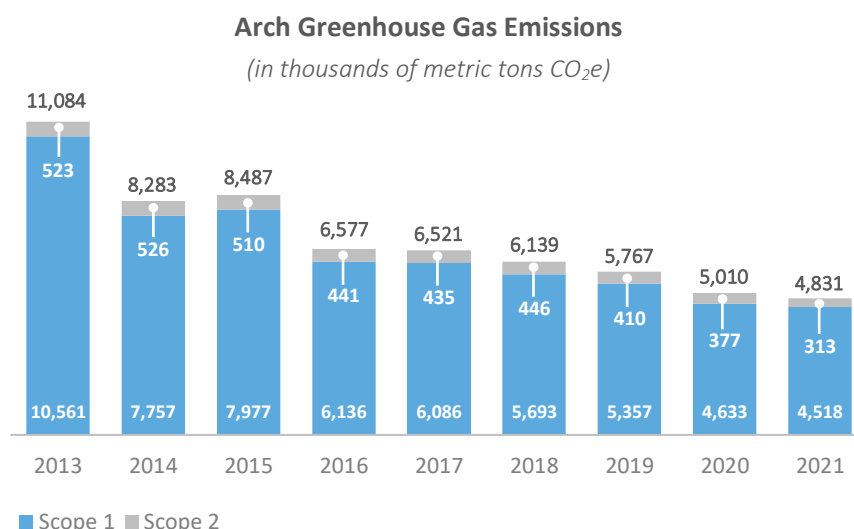
Low-Carbon Opportunities

Arch recently commissioned a high-quality, highly efficient metallurgical mine in West Virginia, at an investment of approximately \$400 million. As an underground longwall mine, it uses electricity as its primary energy source, and its high-quality products should — in some circumstances — help facilitate potential reductions in the emissions profile of its customer base. Perhaps most significantly, it will contribute to Arch's transition from a producer of high-volume, lower-quality products to a producer of low-volume, higher-quality products, which will facilitate the ongoing reduction in the company's overall CO₂e emissions.

Arch's transition towards metallurgical mines is accompanied by a transition towards a greater reliance on electricity, which is increasingly reliant on renewable resources. As a result, Arch's subsidiary operations are systematically increasing the percentage of renewable energy in their aggregate energy use mix. In 2021, Arch's electricity providers sourced 12.3 percent of their power generation from renewable resources.

Greenhouse Gas Emissions

Arch has been tracking carbon emissions from its subsidiary operations for more than 10 years. The company tracks Scope 1 and 2 emissions — including power purchases, materials usage, fuel utilization, and anthropogenic sources — across its operational fleet to calculate the direct or, in the case of purchased power, indirect functional emissions generated in the mining and transferring of resources. While acquisitions and divestitures, as well as other factors, have caused significant swings in emissions levels on a year-to-year basis, the company's combined Scope 1 and Scope 2 emissions have declined by 56 percent since 2013 and are expected to fall further as production levels at its subsidiary thermal operations continue to decline over time. Arch flexed up its thermal coal production in 2021, as compared to 2020, in response to heightened customer needs in the face of high natural gas prices and a rapidly recovering U.S. economy, and expects to do so again in 2022. However, the company remains sharply focused on the responsible and systematic wind-down of its thermal assets, in keeping with the ongoing, structural shift away from thermal coal as a fuel source by its power generation customers.



Arch acknowledges that climate change — and global preparations for a net zero future — represents a significant risk to our business, and has undertaken a significant strategic transition to mitigate that risk. Arch is now targeting a significant reduction in CO₂e emissions, and plans to publish long-term reduction targets in the near future. These reductions will be achieved through reduced energy consumption and other emissions at our operations, facilitated by our ongoing strategic pivot.

Summary of Scope 3 Emissions

As part of our commitment to transparency, we calculate and disclose the greenhouse gas emissions from the downstream transport, processing and use of our sold products. Scope 3 emissions occur from sources not owned or controlled by the company. Some examples of Scope 3 activities are extraction and production of purchased materials; transportation of purchased fuels; and use of sold products and services.

Scope 3 GHG emissions are not directly calculated as they are not owned or controlled by the reporting entity. In the present study, Scope 3 emissions are estimated using Arch's operational data as inputs, the GHG Protocol Corporate Value Chain (Scope 3) Standard as the primary guidance for carbon accounting, and the established emission factors from U.S. Environmental Protection Agency (EPA), U.S. Department of Energy (DOE), and GHG Protocol Standard Tools. Results are presented in a range of values to demonstrate the variability in these emission estimates.

The present analysis includes the Scope 3 emissions categories of Downstream Transportation and Distribution, Processing of Sold Products, and Use of Sold Products for thermal and metallurgical coal products produced by Arch. These reflect downstream Categories 9, 10, and 11 in the GHG Protocol.

The current Scope 3 emissions analysis does not include upstream emissions (i.e., the manufacturing of raw materials and chemicals purchased by Arch) or emissions related to corporate travel and contractors' work. The total 2021 downstream Scope 3 emissions for Arch Resources are estimated to range from 127.7 to 148.5 million metric tons.

Specific Accounting Methods for Coal Transportation, Processing, and End Use

GHG emissions for coal transportation are estimated using the distance-based method; input data from Arch operations (product transportation modes, routes, and product delivery volumes for each Arch facility); and the GREET 2019 model developed by Argonne National Laboratory. The distance for international shipping via colliers is estimated using public online shipping estimators.

GHG emissions for the direct use-phase of coal combustion are estimated using the fuel-based method and are based on the volumes and heat contents of Arch's coal products. Emission factors are applied from established sources including U.S. EPA, U.S. DOE, and GHG Protocol Standard Tools.

GHG emissions for coal processing include coke production for steelmaking from metallurgical coal. Emissions are calculated using the average-data method and are estimated based on the metallurgical coal product volume and emissions factors from the 2006 Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories for the processing of metallurgical coal into coke for steelmaking.

Summary of Scope 3 Emissions Results

Scope 3 Category	Supply Chain Activities	Emissions (MMT CO ₂ e)		
		High	Low	Average
Downstream Transportation and Distribution	Shipment of products by rail and ocean vessel.	7.34	7.34	7.34
Processing of Sold Products	Conversion of metallurgical coal into coke for use in steelmaking.	2.68	2.68	2.68
Use of Sold Products	Combustion of thermal coal for electricity production and metallurgical coal (as coke) for steelmaking.	138.44	117.63	129.75
Totals		148.45	127.65	139.76

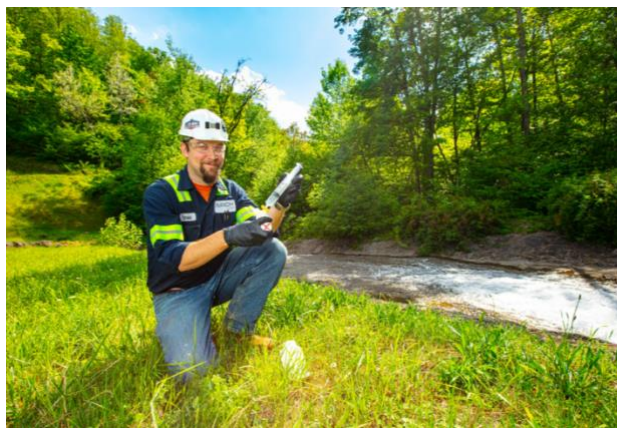
Our Approach to Water

Arch is committed to protecting, maintaining, and enhancing water resources in all areas of its business. We go to great lengths to develop and deploy effective, proactive measures that limit the impact of our operations on water withdrawal, water quality, and aquatic habitats.

Each operating location takes a precise, tailored approach to water quality management — one based on a comprehensive evaluation of water needs, relevant habitats, and potential impacts.

Over the years, Arch has continually intensified its focus on oversight and reporting accuracy through increased employee training, and the broad implementation of real-time alert systems. As part of this effort, the Arch team employs a suite of portable, digital tools that enhance efficiency, accuracy and data management associated with treatment systems, run-off controls and other water quality inspections.

Through ongoing and systematic monitoring and reviews of each operation's water management processes, Arch's environmental professionals regularly identify opportunities to protect water resources. This process includes ongoing groundwater and surface water monitoring, proactively diverting flows around the active mining operations, and reducing the footprint of process areas to proactively minimize potential impacts.



Arch and its subsidiaries create valuable water resources on current and former mine lands and actively manage those resources in a way that contributes greatly to a healthy ecosystem.



Extraordinary Compliance Record

100%

compliance rate in 2021

Arch performed over 134,000 water-quality tests without a single exceedance.

Through the application of its Compliance Management System and its sharp focus on water quality management, Arch has achieved an extraordinary compliance record. During the past five years, Arch has tested an average of 270,000 water quality parameters per year at its current and former mining operations, and recorded an average of just two exceedances per year. In 2021, Arch performed over 134,000 water quality tests and didn't have a single exceedance for a 100 percent compliance rate, despite the frequent occurrence of extreme and fast-moving weather conditions in the mountainous terrain of Appalachia. In 2020, Arch performed over 168,000 water quality tests, and had just one exceedance, which equated to a compliance rate of 99.999 percent. In those rare instances when an exceedance has occurred in recent years, that exceedance has nearly always been minor in nature and has been addressed and promptly brought into compliance.

Compliance Management System

For more than a decade, Arch has been operating in conformance with an EPA-approved Compliance Management System (CMS), modeled after the ISO 14001 Environmental Management System standard. Under our CMS, we require each subsidiary facility to maintain full compliance with all applicable environmental regulations and to monitor that performance in alignment with the "management plan" model of Plan/Do/Check/Act. Each operation regularly reviews its applicable regulatory framework and its environmental operating risks, ranks those risks and mitigates accordingly. Each operation regularly performs self-evaluations of compliance performance, and that performance, and those self-evaluations, are supplemented by corporate environmental compliance audits and third-party audits, undertaken to minimize the risk of noncompliance and environmental harm. The CMS has built-in measures to drive continuous improvement, with emphasis on risk reduction and environmental performance improvement.

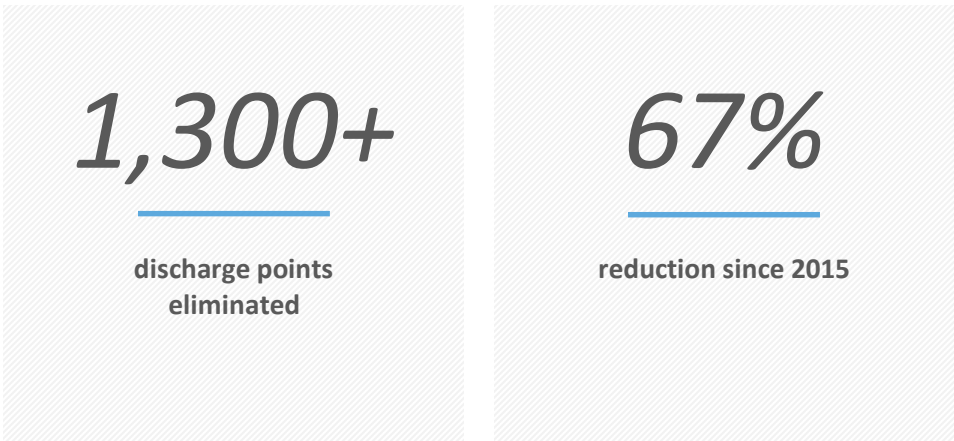
Annual environmental improvement plans are developed by each facility and incentives for outstanding environmental compliance performance are awarded. Underpinning the overall environmental program, Arch utilizes an industry-leading environmental management information system (EMIS) to assist in managing and tracking environmental data; compliance obligations; audit findings and corrective actions; and regular internal reporting of environmental activities. Arch continues to build out the capabilities of its EMIS to improve the efficiency of compliance assurance and to reduce risks of environmental harm.

All of our subsidiary mining operations maintain Environmental Management Systems (EMS) that align to ISO 14001:2015. We continue to evaluate the potential future certification of our environmental management systems to conform to the internationally recognized ISO 14001 standard.

Water Conservation and Recycling

Arch subsidiary operations employ a wide array of strategies to minimize water usage. The company’s subsidiary operations recycle and reuse water from on-site sources in the coal washing and preparation process, in road-dust suppression activities, and in other essential tasks. Closing the water loop and reducing water discharge points not only reduces the need for obtaining additional water resources, but also lowers the risk of environmental impact.

Reducing Water Discharge Points

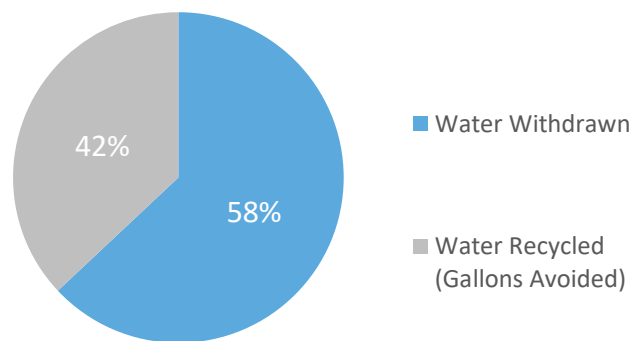


Arch subsidiary operations have invested significant effort in conserving and recycling water to minimize the need to access outside water resources. In 2021, Arch subsidiaries recycled nearly 2 billion gallons of water, thus avoiding drawing a commensurate amount of new gallons from surrounding water sources. These are “gallons avoided” and constitute saving approximately 42 percent of the water that otherwise would have been withdrawn to run Arch’s subsidiary operations. The company continues to explore ways to expand its recycling efforts still further. Through an intense focus on completing robust mine reclamation activities, Arch has eliminated and/or reclaimed over 1,300 discharge points at current and former mining operations since

2015 and currently monitors 650 discharge points. That equates to a reduction of nearly 67 percent of its total discharge points, with the goal of achieving further reductions in coming years.

Beginning with the 2020 operating year, Arch is accounting for its operational water usage according to the guidelines published by the International Council on Mining and Metals as “A Practical Guide to Consistent Water Reporting (2017).” This framework provides methods for quantifying water inputs to a mine’s operation, outputs back to the environment, water consumed by the processes, and recycled water streams, which constitute clean gallons avoided.

2021 Water Usage



Water Accounting

*(in millions of gallons, for Arch and its subsidiary operations)**

Water Withdrawn	Water Recycled	Total Water Used (Withdrawn + Recycled)	Water and Wastewater Discharged	Water Consumed
2,658	1,935	4,593	1,374	1,006

** These numbers are best estimates. Arch continues to refine its data collection and reporting processes, and these numbers will change as the models evolve.*

Water Withdrawn by Source

(in millions of gallons, for Arch and its subsidiary operations)*

Surface Water	Groundwater	Municipal Water	Total
155 (5.8%)	2,465 (92.8%)	37 (1.4%)	2,657 (100%)

* These numbers are best estimates. Arch continues to refine its data collection and reporting processes, and these numbers will change as the models evolve.

According to the Water Resources Institute website, and based on the fact that all Arch subsidiary operations are within the United States of America, Arch has no operations that are within regions with “high or extremely high baseline water stress,” and therefore zero percent of our water is sourced from regions with “high or extremely high baseline water stress.”

Of all the water recycled and reused by Arch subsidiary operations, 100 percent of that volume is recycled back through the same process at the same facility or through a different process at the same facility. Zero percent is reused by a different Arch subsidiary facility or non-Arch facility.

Our Approach to Air

Our subsidiary operations actively work to minimize impacts on air quality. Particulate matter concentrations, wind speed, and weather conditions are monitored continuously, and planning and execution of certain activities are adjusted to limit the generation of dust.

Air emissions associated with mining and preparation processes can include dust, emissions from combustion of fuels including vehicle exhaust, and release of naturally occurring gases from the geologic strata during the mining process.

Potential dust sources include vehicle traffic on unpaved mine roads, dumping and loading activities, material crushing, storage, and — at certain sites — blasting.



Arch's subsidiary operations use an array of methods and tools to protect air quality, including water sprays, enclosures and dust suppressants.

A variety of methods are used to prevent or limit the generation of fugitive and non-fugitive dust emissions. The primary means is to limit those activities that create the potential for generating airborne dust. These may include strategically positioning equipment and routing vehicle traffic patterns for shortened haul ways as well as surfacing long-term roads with stone.

While operations are underway, specific engineering controls are designed into the process equipment for the sole purpose of minimizing the generation of airborne particulates. Examples of these engineering controls include enclosures on coal and refuse conveyance devices, water sprays at material transfer points, the application of dust suppressants on road surfaces and coal storage piles, and the use of baghouse filter systems to capture particulates during material transfers of bulk loads of fine-grained process materials, to

mention only a few. These engineering controls are designed and built into the permitted and approved designs of each of our operations.

While operations are underway, specific engineering controls are designed into the process equipment for the sole purpose of minimizing the generation of airborne particulates.

The teams at each operation understand and maintain compliance with the requirements of air quality permits and perform regular self-inspections to monitor for visible emissions and conduct performance tests on air quality control devices in order to ensure proper operation. Our fully compliant systems operations and their controls are inspected by state regulators on a regular basis.

Interaction with communities near or adjacent to our facilities led one Arch subsidiary operation to launch initiatives recently to control fugitive emissions from coal stockpiles. During high-wind events, excess coal dust can become airborne. To prevent the release of particulates, and to preserve valuable product, the West Elk mine in Colorado developed efficient methods to apply a non-hazardous surface crusting agent to coal piles, using a combination of truck-mounted water cannons and a dozer-mounted applicator, in order to solidify the surface of the pile. These crusting agents are applied in lieu of traditional water applications, which tend to have limited utility once the water evaporates. The crusting agents remain in place for as long as the pile remains undisturbed.

Criteria Emissions

Arch's subsidiary operations deemed to have the potential to exceed certain emissions thresholds for so-called "criteria pollutants" — including particulate matter, carbon monoxide, sulfur oxides and nitrogen oxides — operate under air program permits issued by their respective states. In instances when these permits establish limits on emissions of these pollutants, Arch's subsidiary operations are required to report their actual emissions to the state air regulators on a permit-specified interval — typically annually.

Emissions of Four Criteria Pollutants

(for Arch and its operating subsidiaries, in tons)

Particulate Matter	2017	2018	2019	2020	2021
Corporate Total	5,145	4,660	4,774	4,250	3,702

Carbon Monoxide	2017	2018	2019	2020	2021
Corporate Total	13,533	11,844	12,811	10,643	7,962

Sulfur Oxides	2017	2018	2019	2020	2021
Corporate Total	143	115	118	102	91

Nitrogen Oxides	2017	2018	2019	2020	2021
Corporate Total	11,664	10,647	11,337	9,145	9,139

Arch is targeting ongoing reductions in these criteria pollutants as it continues its strategic transition, including the systematic reduction in its legacy thermal operating footprint. Since 2017, particulate emissions have declined by 28 percent, carbon monoxide emissions have declined by 41 percent, sulfur oxides have declined by 36 percent, and nitrogen oxides have declined by 22 percent.

Our Approach to Land

We apply strict environmental standards to every phase of the mining process — from exploration and development to active mining and reclamation. Before beginning the mine permitting process, we assess all potential environmental impacts — through careful analysis — and implement mitigation plans to ensure such impacts are minimized.

As part of this effort, we routinely analyze baseline hydrology (including water quality and quantity), existing biological communities, the presence of endangered species, anthropological resources, landscape structure and soil conditions, and native plant species, among other aspects.

Our industry is one of the most highly regulated business sectors in the United States. We operate under an extensive regulatory regime that includes state and federal components of the Surface Mining Control and Reclamation Act, Clean Water Act, Clean Air Act, Safe Drinking Water Act, Resource Conservation and Recovery Act, Emergency Planning and Community Right to Know Act, Toxic Substances and Control Act, and National Environmental Policy Act, among others. Our team of skilled and experienced environmental engineers and compliance managers work closely with state and federal agencies to promote the compliance of our operations with applicable laws and regulations.

Our operations have restored more than 26,000 acres of former mine lands since 2016

Reclamation

As a routine and required stage of the overall mining life-cycle, Arch devotes significant time and attention to reclaiming sites after mining activities are completed. Our subsidiaries undertake contemporaneous reclamation at all active sites. In addition to timely and contemporaneous reclamation of active sites, we responsibly manage idled and closed mine assets, including any pre-existing obligations associated with prior acquisitions. Included in this latter category are transferred properties where we apply our expertise and a

range of innovative practices to mitigate and eliminate water impacts and shorten the amount of time needed for ongoing treatment.

In every operating region, we take our reclamation efforts seriously and are often recognized for excellence by state and federal agencies. Each reclamation project is viewed as unique, and great attention is paid to ensure that the land is restored to its approximate original contours and to an equal or better post-mining land use. Often the reclaimed land is indistinguishable from surrounding terrain within just a few growing seasons. We are committed to pursuing continuous improvement in our reclamation so that we leave sustainable lands for both wildlife and community needs.



Committed to Reclamation Excellence



We take pride in our restoration efforts — whether for wildlife habitat, range land, forestland or community use — and we work diligently to enable the land to be returned to equal or better condition than that which prevailed in its pre-mining state.

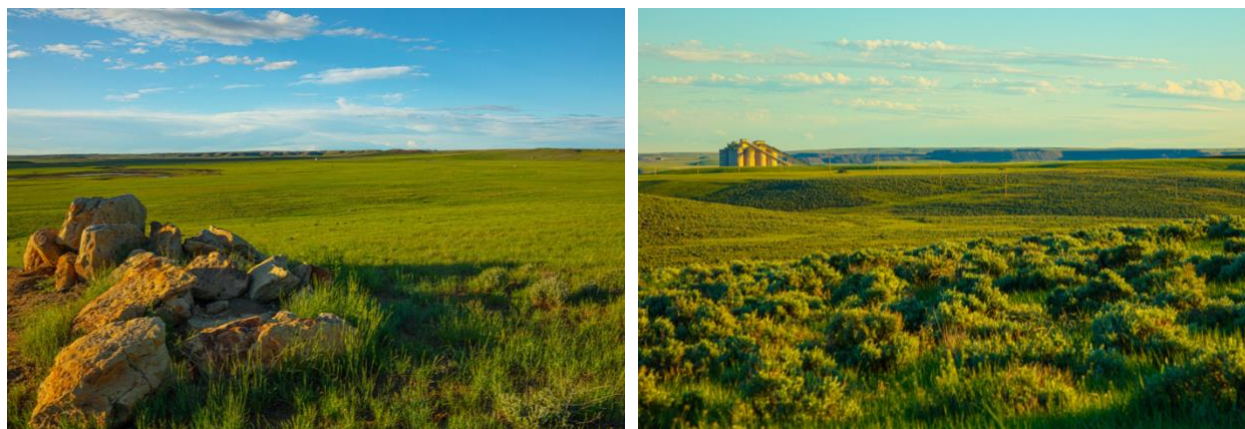
Since 2010, Arch subsidiary operations have claimed one of the top two national honors for reclamation excellence and community engagement — the National Reclamation Award and the Good Neighbor Award — seven times. During 2020, the Leer South mine won the Good Neighbor Award for its ongoing work engaging with community leaders and advancing critical infrastructure projects.

During 2020, an Arch subsidiary won West Virginia’s top reclamation honor, the Greenlands Award, which recognizes the mining reclamation project that meets and exceeds the highest standards for reclamation effectiveness, innovative practices, post-mining land use and habitat re-establishment and improvement. In fact, an Arch subsidiary has won this prestigious award in seven of the past nine years.

In addition, Arch subsidiaries won two awards from the state of West Virginia in 2021 for exemplary reclamation techniques at former mine lands.

In Colorado, the West Elk mine was honored in 2021 as “best-of-the-best” and was bestowed with the Environmental Stewardship Award for its water conservation and pollution prevention efforts, as well as for its voluntary efforts to employ flares in the destruction of coal mine methane.

In recognition of its efforts, Arch has received state reforestation awards in West Virginia and Maryland in six of the past 11 years and has received the coveted Appalachian Regional Reforestation Initiative (ARRI) Award three times in the past decade. In 2021, an Arch subsidiary was again honored for its innovative and effective reforestation efforts on a former mine site.



Arch’s reclaimed mine lands in the western United States are more productive than the native terrain, provide better grazing for livestock, and support a rich array of wildlife.

The ARRI initiative is a cooperative effort between the U.S. Department of Interior’s Office of Surface Mining Reclamation and Enforcement (OSMRE); the states of Kentucky, Maryland, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia; environmental organizations; academia; industry partners; local, state and federal government agencies; and private landowners. Each year, a single award is presented to the reforestation reclamation project that best achieves the ARRI objectives of 1) re-establishing high-value hardwood trees on reclaimed mined lands in Appalachia, 2) increasing the survival rates and growth rates of planted trees, and 3) expediting the establishment of forest habitat through natural succession.

During 2021, Arch’s Powder River Basin subsidiary achieved final reclamation and release on more than 5,700 acres of grassland habitat, which is a critical component of a healthy ecosystem.

In Wyoming, our subsidiary operations utilize practices that ensure reclaimed habitat provides needed forage, nesting and coverage requirements for native bird species. Reclamation grading and landscaping simulate the topography of the native lands, and specific seed mixtures of native grasses and shrubs are selected to replicate pre-mine habitat.

Overall, our operations have restored more than 26,000 acres of reclaimed land since 2016. In recent years, we have placed particular emphasis on completing Phase III release, which is the final stage of bond release on reclaimed areas, as well as the final regulated step in the mining process. State regulatory inspectors oversee and approve each successive step in the process and ultimately approve final release of the properties from protective reclamation bonds. We have placed a major emphasis on reclamation and bond release companywide. Final release is only granted once an operation has demonstrated that the landscape has been successfully reclaimed and that the vegetation is effectively established and stable.

Ecosystem Management

Arch and its subsidiaries understand and embrace the importance of protecting, restoring and enhancing ecosystems in our operating regions before, during and after mining takes place, and our subsidiaries protect, restore, and enhance ecosystems at all of their operating sites. With help from a variety of organizations, we go to great lengths to protect, preserve, and establish suitable habitats for wildlife. Our properties often serve as wildlife reserves for a variety of native species, even while reclamation is still under way.



Arch is engaged in efforts to conserve and expand the Burrowing Owl, Wild Elk and Greater Sage Grouse populations and habitat, among other species.

In particular, our subsidiaries have made substantial efforts to protect and promote avian populations, with a particular emphasis on raptor species. Our Wyoming subsidiary has worked to provide improved habitat on reclaimed lands, establishing new and replacement nesting structures, and relocating and rescuing birds as needed. The Wyoming operations have also initiated an Avian Protection Plan (APP) with the goal of eliminating or minimizing risks to avian species protected under the Migratory Bird Treaty Act (MBTA), including risks posed by above-ground power lines and associated electrical structures. As part of the initial work for the plan, all electrical structures on our sites were scrutinized by wildlife professionals to evaluate potential impacts. We have since removed 100 percent of the identified hazards. This work included removing power lines and poles and providing alternate perches for such species as the Golden Eagle. Additionally, our operations have built nesting platforms on reclaimed land to encourage nesting away from active operations, and have created nest sites using natural substrate including trees, rock, outcrops and banks.

In an ongoing raptor study, our Wyoming operations are working with and supporting the U.S. Fish and Wildlife Service to study the nesting and migration patterns of the Burrowing Owl, a regional species that thrives on and around our Wyoming operations. In 2019, there were 25 owls captured on our Wyoming operations, with transmitters deployed on the 12 adults. These transmitters will enable government officials to better understand migration routes and wintering areas, which in turn may provide valuable insights into the reasons for the decline of the species, and on ways to improve management efforts.

Furthermore, our Wyoming subsidiary has worked for more than five years with state and local conservation groups in an effort to protect the Greater Sage Grouse. The Greater Sage Grouse, which is found in sagebrush country in the western United States, is the largest grouse in North America. The bird's numbers began declining in the second half of the 20th century in many areas, resulting in the U.S. Fish and Wildlife Service (USFWS) proposing the Greater Sage Grouse as a candidate for protection under the Endangered Species Act. Arch's Wyoming subsidiary is a member of the Thunder Basin Grassland Prairie Ecosystem Association. This association, which won a U.S. Department of Interior Good Neighbor Award for its efforts, was created to develop core protection areas and to provide stipulations for development within these areas as part of an effort to conserve and expand the species through habitat enhancement. Candidate conservation agreements for the sage grouse were developed and approved by the USFWS, and act to protect and enhance habitat critical to the bird's ongoing success.

Arch Resources has fully reclaimed and released nearly 16,000 acres in southern Wyoming. These acres have been restored to a level that exceeds pre-mining conditions, and support rich wildlife and livestock grazing populations. This reclamation effort, completed in strict accordance with permits issued by the State of Wyoming under the federal SMCRA regulations, completes the lifecycle of mining on these acres and includes the termination of the Medicine Bow mine permit and large portions of the Seminoe II mine permit. This constitutes the final approved reclamation of over 98 percent of the area of mining disturbance. The remaining 2 percent footprint has yet to complete its 10-year waiting period and is scheduled to do so in the near term.

As a further example of our commitment to wildlife and habitat enhancement and utilization, our land management subsidiary has teamed with the Rocky Mountain Elk Foundation (RMEF) on a conservation easement in northeastern Wyoming covering some 1,000 acres of reclaimed mine property. This land, which lies in the heart of the Thunder Basin National Grassland ecosystem, has helped support a thriving elk population for the past 15 years or so. RMEF's annual surveys confirm that the property provides significant habitat for elk, mule deer, pronghorn antelope, and many non-game animals and other regional Wyoming wildlife.

Protecting Critical Habitat and Areas of High Biodiversity

Arch and its subsidiary operations are committed to evaluating all projects for potential impacts to critical habitats, as defined by the U.S. Endangered Species Act (ESA). In addition, Arch routinely reviews all projects to identify areas of significant importance to endangered species of flora and fauna. Such evaluations are routinely required as part of the environmental assessments and environmental impact statements that must be conducted prior to mining on federal coal reserves.

Furthermore, Arch assesses potential impacts on endangered species and habitats of critical importance as part of the application process for all coal mining permits issued under the Surface Mining Control & Reclamation Act (SMCRA) and the Clean Water Act (CWA). These reviews apply the external standards required for identifying critical habitat and vulnerable natural resource systems. These external standards are stipulated by Section 3(5)(A) of the ESA; Section 762.11 of the SMCRA "Areas Unsuitable for Mining"

regulation; Part 779 of the SMCRA Minimum Requirements for Review of Environmental Resources; and CWA Sections 402 and 404, among other regulatory provisions. These and other U.S. federal regulations require review of overall environmental resources, vegetation, soil, water and climate impacts.

In aggregate, this comprehensive set of environmental regulations encompasses potential impacts to air, water and soils within and adjacent to the permitted area; terrestrial and aquatic environments; migration patterns; nesting and hibernation habitats; wetland habitat; water availability; and quality impacts. If potential impacts are identified, agencies may prohibit mining activities outright, or stipulate requirements for mitigation and remediation activities in advance of disturbance. In addition, Section 7 of the ESA requires that, if a threatened or endangered species or critical habitat lies within or adjacent to the permit area, a consultation may be invoked by the U.S. Fish & Wildlife Service with the federal or state regulatory authority to further develop safeguards for — or enhancements to — the mining plan.

Arch recognizes the importance of respecting, identifying and conserving natural biodiversity in all its dimensions. While some aspects of the mining process may temporarily disturb existing natural systems, we view it as our obligation to minimize these impacts and to return the natural systems to their pre-mining natural resource value. In fact, written into the governing regulations of SMCRA, which controls all aspects of our industry and operations, is a requirement that mining disturbances be reclaimed to equal or higher post-mining land use. We are required to conduct pre-mining analysis of our mine sites and designate the best land use achievable with reclamation. This effort requires effective planning, design and careful reclamation, with ongoing monitoring to ensure that reclamation objectives — including the reestablishment of species biodiversity — are achieved and remain durable.

Specifically, when the appropriate post-mine land use is determined to be “wildlife habitat,” areas are restored in a manner that achieves the approximate original contour of the land while seeking to ensure that prevailing wildlife species are properly supported. In fact, in many cases, the reclaimed properties provide enhanced habitat conditions, supporting greater diversity than pre-mining conditions through the provision of “edge” development as well as early successional growth amid predominantly old growth habitats. Native species of trees, shrubs and grass species are used for this purpose. University studies have demonstrated, for example, that the Cerulean and Golden-wing Warblers, identified as “vulnerable” species, thrive in the forest edges of reclaimed areas of coal mines in the eastern United States. Further, due to the increased density and more diverse species of rodents and small furbearers on reclaimed lands, raptors such as hawks and eagles thrive on our reclaimed lands. At our operations in the semi-arid region of Wyoming, the reestablishment of sage brush and other native shrubs is critical, and studies extend for a decade or more to ensure proper densities of those species are maintained, thus ensuring that floral diversity will continue to support the faunal diversity goals for the reclamation.

As part of our commitment to protecting biodiversity and vital lands, Arch subsidiary operations for more than 10 years have been a participating member in the Thunder Basin Grasslands Prairie Ecosystem Association (TBGPEA), a group of landowners, companies and not-for-profits that work together to properly monitor and help manage the 13.2-million-acre Thunder Basin Grassland (TBG) in northeastern Wyoming. The TBGPEA “works in collaboration and cooperation with a variety of government and non-government entities, as well as with experts in academia and members of the private sector ... to fund and implement a variety of conservation efforts within [the TBG] landscape” in the interest of protecting this area of unique biodiversity and high conservation value.

Protection or enhancement of aquatic habitats is a component of stream restoration to support the natural function of streams for native fish, aquatic invertebrates and insects. As part of the water discharge permitting process, the evaluation of existing aquatic biodiversity is required in order to ensure discharges during mining operations do not adversely affect downstream populations. Where temporary disturbances of

aquatic habitats are necessary during mine development, restoration of the streams must be performed in a manner that replaces stream structure, sun exposure, riffle/pool dynamics, and many other elements of long-term productiveness.

Additionally, Arch and its subsidiaries are required to take into account the timing of land-clearing operations to protect threatened populations of bats — Northern Long Ear and Indiana bats in particular — during the warmer seasons. Hibernacula are identified and protective measures are taken to prevent disturbance of hibernating populations.

All of these measures and many more like them are critical components of Arch's broad commitment to identifying the impacts of our operations on ecological systems, biodiversity, and areas of high conservation value.

Our Approach to Waste

As an efficient operator in a highly competitive business, Arch implements best practices to minimize the use of raw materials and inputs, thereby reducing the generation of waste.

Further, as a U.S. operator, Arch is subject to the governing regulations of — and to oversight by — the U.S. Environmental Protection Agency, U.S. Department of Interior, U.S. Department of Transportation, U.S. Department of Commerce, U.S. Department of Agriculture, U.S. Department of Energy, and all applicable regulators in the states in which we operate.

In addition, each of these regulatory programs maintain inspection programs, under which our subsidiary operations are subject to spot compliance inspections by agency staff, whether announced or unannounced. Across the board, Arch subsidiaries maintain an outstanding compliance record with these types of outside inspections and, according to the frequent feedback we receive, hold an excellent reputation for exemplary performance with state and federal agency staff.

Waste materials generated at Arch subsidiary operations are strictly regulated and Arch is sharply focused on complying with all applicable regulations. Under this management and regulatory framework, Arch's subsidiary operations staff receive training that help them to manage the various waste streams from across the operations, and to recognize the importance of minimization as well as the proper segregation and management of recyclable, non-hazardous, universal and hazardous wastes.

Arch subsidiary operations have systems in place to capture the value of recyclable materials. Vendor contracts are in place to recycle a range of materials — including various metals (scrap iron, steel, stainless steel, aluminum, copper and others), used oil and antifreeze, industrial batteries, plastics, and wooden pallets — to prevent these materials from entering the waste disposal stream.

All Arch subsidiary operations work to maintain their status as Very Small Quantity Generators (VSQG) of hazardous waste. The USEPA has established this lowest of categories for facilities that produce less than 100 kilograms — which is to say less than around 220 pounds — of hazardous waste per month from all sources. Each Arch subsidiary facility that generates hazardous and universal wastes isolates these wastes in proper storage containers, segregating waste to prevent comingling waste types to avoid adverse and unsafe reactions between potentially reactive materials. As part of the routine management program, environmental staff track accumulating quantities of wastes to ensure monthly quantity thresholds and storage time thresholds are not exceeded, and schedule waste shipment and dispositions accordingly.

As part of the regulatory requirement under the USEPA's Resource Conservation and Recovery Act (RCRA), facilities are required to track their generation, storage and disposal of hazardous wastes. Arch facilities track on a monthly basis the generation of hazardous wastes from routine operations, as well as the "episodic" generation of wastes. EPA has created a special set of regulations for Very Small Quantity Generators to allow for "episodic events," defined as "any circumstance, planned or unplanned, that does not occur as part of

normal operations and causes a VSQG ... to exceed their monthly hazardous waste generation limit.” To meet the episodic event exemption to the limits, facilities are expected to have one or fewer episodic events per year.



Hazardous Waste Generation

for Arch and its Subsidiary Operations
(in pounds)

2016	2017	2018	2019	2020	2021
2,541	3,680	3,728	4,122	3,553	1,440

Minimizing Hazardous Waste Generation



All chemical purchases must be reviewed and approved by an environmental engineer before purchase.

Arch facilities work to minimize hazardous waste generation by buying products that do not have hazardous characteristics. This is accomplished by implementing Arch’s Best Management Practice (BMP) of chemical purchases — which requires all chemical purchases to be reviewed and approved by the environmental engineer before purchase — in order to minimize hazardous waste generation and ultimate disposal. In addition, operations are required to maintain detailed records of monthly waste generation, storage and disposal from “cradle to grave,” as EPA characterizes it.

When hazardous wastes are generated and managed for proper disposal, Arch and its operating subsidiaries use only reputable national disposal contractors, with licensed disposal facilities and compliant management processes. Arch and its subsidiaries undertake triennial audits of their waste management vendors to verify that wastes are reaching proper ultimate disposal and that vendors are following proper regulatory practices in the management of wastes generated at the mining operations.

As indicated, most non-recyclable waste materials that are generated at Arch facilities are classified as non-hazardous, allowing for typical landfill disposal. That said, Arch facilities recognize that disposal of these non-hazardous wastes can represent their own type of environmental impact, and is expensive and time-consuming. Each operation strives to minimize waste generation and employs a variety of means to achieve that goal, including: 1) minimizing the quantity of purchased products to minimize waste generation, 2) recycling qualified materials, 3) working with vendors to minimize packaging, 4) buying, receiving and storing process materials and fluids in bulk to reduce or eliminate small-quantity containers, and the like.

Arch strives to minimize its wastes destined for landfills. Arch corporate offices and many of its subsidiary facilities have programs in place to recycle office wastes, including paper, aluminum and plastic containers, electronics, and obsolete furniture items. (The distance from metropolitan area resources has created challenges for securing recycling services at certain mines, but Arch's subsidiary operations continue to explore ways to address this shortcoming.) Each year, the company sponsors a programmatic electronics recycling pickup program to provide the operations with an efficient pathway for disposal, in order to keep electronic wastes out of landfills.

As a first step, Arch practices waste avoidance by working with vendors to package shipments of materials and supplies in a way that minimizes expendable shipping materials. A prime example of this is the elimination of wooden pallets when products can be bound and packaged for delivery using alternate methods.

Arch operations have systems in place to capture the value of recyclable materials to prevent them from entering the waste disposal stream.

Impoundments

Arch applies best mining industry practices and follows rigorously all regulatory-driven requirements for the geotechnical design of its tailings management structures, or refuse impoundments. Arch manages a total of 10 tailings facilities — which hold rock, clay and process water from the coal preparation process — across its operational portfolio. Of these, five are associated with operating mines and five are associated with now-closed mines formerly operated by Arch or a predecessor company. All five of the facilities in this latter category are currently undergoing reclamation.

Each of Arch's operations regularly inspects its impounding structures according to applicable regulations and inspection schedules. In addition to these required self-inspections, the Mine Safety and Health Administration (MSHA), which is part of the U.S. Department of Labor, conducts its own frequent, independent inspections and reviews all documentation associated with Arch's self-inspections. In addition, Arch's operations are required to summarize and report on the construction, management, and maintenance of all impounding structures subject to MSHA regulations, and to submit a detailed annual report to the agency on all critical factors.

Above and beyond the statutory requirements, Arch engages an independent engineering consultant to perform third-party audits on all active impoundments to ensure ongoing rigor and attention to critical engineering details. These audit reports are provided to the operations and are shared with Arch senior management to ensure that any required corrective measures are addressed.

Arch's tailings facilities completed all their inspections and assorted internal and external reviews as scheduled during 2021. Arch has had no significant incidents at its tailings storage facilities in the past two decades.

TRI Reporting

Under the provisions of the EPA's Toxic Release Inventory (TRI) regulations, Arch is required to evaluate and report releases of chemicals identified in §313 of the Emergency Planning and Community Right-to-Know Act (EPCRA). Under the Act, releases are classified by the so-called "receiving medium" — which is to say land, air and/or water. The June 2019 USEPA "List of Lists" identifies the 1,179 separate chemicals regulated under §313.

Arch and its subsidiaries rely on an internal materials management system, where purchased products and inventories are managed and tracked, to identify any products containing one or more "§313 chemicals." For those products identified as containing §313 chemicals, additional evaluation is undertaken to determine the total quantity of reportable §313 chemicals used at each facility each year. EPA requires facilities that use and/or dispose of greater than 10,000 pounds of general §313 chemicals — and smaller quantities of some specific toxic chemicals — in any given year to report those usages and emissions to EPA. Arch reviews all its subsidiary operations for use of these chemicals and thresholds, and reports accordingly.

Over the past five years, Arch has not exceeded the reporting threshold — thus triggering EPA reporting — at any of its current subsidiary operations.

Spill Prevention and Protection

Fundamental to Arch's commitment to environmental protection is preventing the spill or release of materials or wastes into the environment. This commitment begins by Arch subsidiary operations limiting the quantities of inventoried materials stored onsite to the minimum necessary to operate efficiently. With that necessary inventory, Arch subsidiary operations conform to strict regulatory requirements and industry best practices for proper storage methods and locations, secondary containment, spill prevention, spill response, and emergency contingency planning. Prior to acquisition of all chemical products, Arch environmental staff undertake as a standard practice reviewing the products' chemical constituencies to assess the potential environmental and safety hazards as well as the post-use waste characteristics, to determine whether non-hazardous alternatives are available for the same application.

Proper storage and containment of bulk products is key to preventing accidental release. Ensuring that primary and secondary containments are properly designed, constructed, installed and regularly inspected ensures products remain contained and controlled. This includes considering the location of storage systems relative to available controls and potential down-gradient impacts, should an emergency condition develop. Arch applies specific practices that call for protective placement of tanks, piping infrastructure and facilities in locations that minimize the potential for offsite release.

Every Arch subsidiary operation has in place emergency response plans that address a variety of contingencies, including spills of materials that can potentially impact the environment. These emergency response plans identify the responsible personnel and their duties, internal and external notifications, response protocol, and actions required to protect workers, the public and the local environment.

Supplemental to emergency response plans, every operation that meets the regulatory threshold maintains a Spill Pollution Control and Countermeasure (SPCC) Plan, required by USEPA's Emergency Planning and Community Right to Know Act (EPCRA). These plans specifically require that all oil-based products and wastes be managed in a manner that minimizes the possibility for release to the environment, and address prevention measures, minimum facility standards, contingencies and response protocols.

Similar to the SPCC plans, the State of West Virginia requires the preparation and maintenance of a "Groundwater Protection Plan" (GPP). While the SPCC plans specifically address potential spills of "oil" products and wastes, the West Virginia GPPs similarly address any product/material that may "reasonably be expected to have an impact on groundwater." Directly linked to the GPP program is the West Virginia Aboveground Storage Tank (AST) program, which requires inventory, registration and maintenance plans for specific classes of tanks.

In the past 20 years, Arch and its operating subsidiaries have had no significant spills. Since 2010, the company's subsidiary operations have only had one spill or release that met the reporting threshold for required reporting to a state or federal agency. That spill was minor and was quickly and responsively cleaned up with no material impact to the environment. It did not meet the definition of Natural Resource Damage subject to assessment of fines or penalties.

In 2014 at the Beckley mine, a HDPE pipeline separated at a joint and allowed coal slurry to be released into an ephemeral stream and traveled off of the permitted property boundary. The release was immediately reported to state regulators and cleanup of the coal fines was immediately initiated under a standing contract with our emergency response contractor. The slurry material did not reach a jurisdictional waterway under the Clean Water Act and it did not meet the definition of Natural Resource Damage subject to assessment of fines or penalties. As a result of the operation's quick response and effective cleanup, no violation or penalty was issued to the operation for the incidental release.



SOCIAL

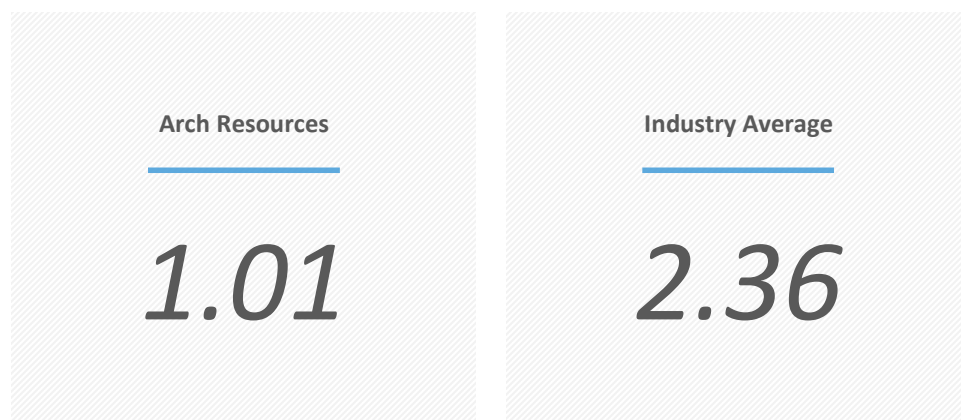


Our Approach to Safety

Safety is a deeply engrained value at Arch. We have consistently led our large, integrated peers in safety performance, as measured by lost-time incident rate. While we're proud of that accomplishment, we're sharply focused on further improvement. We have made zero safety incidents at every operation every year our single, highest priority.



Leading in Safety Performance



Lost-time incidents per 200,000 employee-hours worked in 2021

During the past five years, Arch has averaged 0.94 lost-time incidents per 200,000 employee-hours worked, versus an industry average of 2.25. In 2021, Arch averaged 1.01 lost-time incidents per 200,000 employee-hours worked, versus an industry average of 2.36. During the past five years, Arch and its subsidiaries had an average all-incidence rate of 1.29.

As part of its behavior-based safety culture, Arch's subsidiary operations also track safety "near misses" as part of an ongoing and comprehensive effort to identify and eliminate risks wherever they might occur. During 2021, the employees at Arch subsidiaries identified 334 instances in which risks that could

have resulted in injury were present, creating invaluable opportunities to address such risks and reduce the potential for injury in the future. During the past five years, Arch and its subsidiaries had an aggregate average safety “near miss” rate of 12.59 per 200,000 hours worked.



Arch's corporate culture is grounded in a proactive, behavior-based approach to safety and in the core belief that operating safely is each employee's top priority.

Arch and its subsidiaries are unified in the objective of achieving zero injuries at each operation each and every year, with a highly intensive emphasis on serious injury elimination. Tragically, Arch subsidiaries have experienced three fatalities in the past five years, for a fatal incident rate of 0.015 per 200,000 employee-hours worked.

Across the organization, employees engage in a proactive, behavior-based approach to safety. Every field employee participates in safety training on an ongoing basis, and nearly 100 percent of our field employees have been trained as safety observers. If an at-risk behavior or a barrier to safe behavior is identified, employees are empowered to engage and to apply their training to resolve the potentially unsafe condition or practice immediately. During 2021, Arch's operating subsidiaries conducted 258,521 written safety observations and 115,199 written pre-job risk assessments, along with countless verbal observations and assessments.

Operating safely and responsibly is Arch's single highest priority
and the cornerstone of our corporate culture.

PAUL A. LANG, CEO

Since launching the behavior-based program in 2007, Arch's operating subsidiaries have recorded more than 1.75 million safety observations and — in so doing — have created a deep, employee-driven safety culture. Most importantly, the process has resulted in the successful modification of at-risk behaviors and has served as a platform for reinforcing positive behaviors. In addition, Arch operations conduct safety meetings in advance of every shift, to enable every employee to begin every workday sharply focused on working safely.

Employee-Driven Safety Culture

1.75

million

*Safety observations recorded
by Arch's operating
subsidiaries since launching
the behavior-based safety
program in 2007*

Each Arch subsidiary has recruited a team comprised of both hourly and salaried workers focused on achieving continuous improvement in behavior-based safety at their individual operations. These teams meet with operations leadership and members of Arch's senior management team annually to report on their successes, explore areas for potential improvement, and refine their plans for the coming year. Beyond regularly scheduled training, preparation is essential to an effective and timely response in the event of a crisis. We measure the effectiveness of our preparation efforts — which include mine rescue teams, fire brigades and a yearly Mine Emergency Response Development (MERD) exercise — through annual site evaluations, where we also explore opportunities for improvement. The MERD exercises bring together national and state safety regulators, key personnel from Arch's operations, and communications professionals, and create an opportunity for that diverse group to train and drill together in order to promote a cohesive and effective response in the event a crisis ever occurs.

A Commitment to Safety Excellence

40+

**national and state
safety awards**

*Arch subsidiaries have
won more than 40 national
and state safety awards in
the past five years*

While emphasis on at-risk behavior has resulted in further improvements in our safety performance, Arch has expanded its efforts to include procedures that have an elevated exposure to risk. Over the past nine years, our mining complexes have conducted Workplace Risk Assessment and Control (WRAC) evaluations. Participation in the WRAC process challenges employees who perform a job function regularly to conduct an in-depth, multi-level evaluation of the procedure in an effort to prevent the occurrence of future safety events. As potential hazards are identified, the group makes the necessary changes to the procedure to mitigate those potential hazards, and those changes are documented and shared across the company. This type of evaluation provides employees with a forum to express potential risks they may encounter while completing their daily tasks — and to problem-solve as a team in order to adjust the procedure appropriately.

Arch's operations maintain nine mine rescue teams that are highly trained in responding to a mining crisis at our own subsidiary operations as well as in assisting other operators. In the past five years, our rescue teams have achieved top finishes in local, state and national mine rescue competitions. Such competitions provide valuable opportunities to sharpen team skills, identify and adopt best practices, and gauge preparedness.

In addition, each of Arch's underground mines is equipped with advanced rescue equipment, sophisticated communications and tracking systems, and underground refuge chambers equipped with oxygen canisters, water, food and other life-sustaining necessities. Arch's Wyoming Surface Mine Rescue Team (SMRT) will also respond to assist the county when requested.

Sentinels of Safety Award

10

Sentinels of Safety awards
since 2010



The nation's most prestigious national award for mine safety

In the past 11 years, Arch subsidiary operations have won 10 Sentinels of Safety awards, the nation's most prestigious national award for mine safety, including the awards for the large underground and small preparation plant categories during 2020.

Recently, the Leer mine — the largest underground mine in Arch's subsidiary portfolio — operated more than 2 million consecutive employee-hours, or nearly two full years, without a lost-time incident.

During 2020, the Leer mine captured the Milestone Safety Award — West Virginia's top honor for underground mines — and both the Leer South and Leer South prep plant received West Virginia Mountaineer Guardian Awards for safety excellence. The Leer mine has won the Milestone Safety Award five times in the past seven years.

On the surface side, the Black Thunder mine in Wyoming recently completed a full year of operation, and more than 2 million employee-hours worked, without a single lost-time incident.

As part of Arch's health and wellness programs, we offer our employees a formal disease management program and tailored advice and coaching for a variety of health issues. In addition, company health fairs provide free health screenings for prevention and early detection.

Our Approach to Community

Beyond the broad economic benefits that our operations provide, Arch and its subsidiaries make it a priority to enrich our local communities in other ways, too. We encourage our employees to take an active role in community organizations and projects, and to cultivate strong relationships with neighbors.

Through philanthropic and economic contributions, we believe we are improving the quality of life in the areas in which we operate — for the benefit of our own employees and their families as well as the broader communities in which they live and work.

Arch and its operating subsidiaries have made open communication and dialogue a high priority. We use various tools and forums to promote community engagement, including community advisory panels (CAPs). At the Leer metallurgical mine in Grafton, West Virginia, for example, the mine's leadership team meets quarterly with a CAP comprised of approximately 20 representatives from the area, including business leaders, educators, emergency responders, and elected officials, among others. During these meetings, the mine informs community leaders about upcoming mine developments of significance, including its future investment and development plans, and educates these community leaders on the process of mining. At the same time, the meetings create opportunities for community members to ask questions, share concerns, and make suggestions about opportunities for collaboration between the mine and the local citizenry.

The success of the Leer CAP inspired the company to establish a second community advisory panel in Philippi, West Virginia, where an Arch subsidiary recently completed construction of a second world-class metallurgical mine called Leer South. By engaging community members at the earliest stages of the mine's development, the Leer South team was able to solicit valuable input about its neighbors' needs, aspirations and concerns. Based on this feedback, the mine recently made a commitment to fund needed upgrades to Adaland Mansion, a cultural center, event site and tourism attraction located in Philippi that is listed on the National Register of Historic Places. In addition, the mine has conducted much-needed brush clearing and landscaping work on the mansion grounds, at the request of local officials.

Arch and its subsidiaries undertake a formal process for stakeholder engagement and consultation in advance of the opening of any new operation, and maintain that engagement on a continuing basis at existing operations. While the forum for such engagement varies from mine to mine — with the community advisory panels at our flagship Leer and Leer South operations being but two examples of our formal outreach efforts — every subsidiary operation is expected to engage frequently and continuously throughout the year with area residents, local businesses, landowners, government agencies and other officials, Tribal Nations if and as applicable, and other relevant stakeholders.

In keeping with this deep and longstanding commitment to community outreach, Arch's subsidiaries make it a high priority to abide by both the letter and spirit of the law when it comes to the highly rigorous permitting processes that govern all mining activities in the United States. Before the development of a new mine commences or mining activities begin — as well as at key points during the mining process — Arch

subsidiaries engage with multiple federal and state agencies to secure the necessary permits to conduct business. Public comment opportunities are a central component of these efforts, and Arch takes its obligations to community engagement and outreach seriously. Our goal is to be as responsive as possible to community concerns, and to work with neighbors and community leaders to address and allay such concerns to the fullest extent possible.

Exemplifying this commitment to public involvement, the U.S. Department of the Interior in 2020 honored the Leer South mine with the Good Neighbor Award — the nation’s highest honor for community engagement and outreach — for its ongoing work engaging with community leaders and advancing critical infrastructure projects. Notably, the Leer mine was the sole recipient of the Good Neighbor Award in 2019 for its work in actively engaging the community and incorporating public involvement and input into its mine planning and operations.

As another example of Leer’s strong commitment to serving community interests, the mine has invested nearly \$1 million of incremental capital to outfit its mine ventilation fans with the most advanced noise-dampening technologies. As a result of this incremental investment, the new ventilation fans are roughly 1/20th as loud as typical mine ventilation fans.



Funding Projects that Benefit Communities



The Leer South mine recently engaged with the City of Philippi and the federal Economic Development Authority to help fund a \$2 million, three-mile sewer line extension that will serve the needs of the mine while facilitating the extension of city sewer services to as many as 150 additional homes.

Similarly, the Mountain Laurel mine worked with a group of community leaders — providing both equipment and labor — to develop Rockhouse Lake, a recreational facility and natural resource located in a 127-acre park. The lake and park provide significant outdoor opportunities in Logan County, West Virginia. Employees have also donated their time and resources to continue to enhance the offerings at the lake, including

making it handicap accessible. In recent years, employees have volunteered their time to work with local residents with disabilities, helping them to take advantage of the new, accessible facilities. In 2021, Mountain Laurel provided grounds maintenance services at the facility to ensure access to the lake's walking paths, boat docks, and fishing benches. The Mountain Laurel team also worked with the community to perform needed maintenance on a local cemetery.

In another effort, the Leer mine partnered with the Taylor County Soccer Association in Knottsville, West Virginia, to provide land for the development of a nonprofit soccer complex that provides thousands of area families a place to play, exercise and practice healthy lifestyles.

Arch's subsidiaries have made education and partnering with local schools a particular emphasis for the long-term health and success of their communities.

Arch's subsidiaries have made education and partnering with local schools a particular emphasis, which they believe is a sound investment not only in their own future workforces, but also in the long-term health and success of their communities. Arch subsidiaries support and participate in a wide array of activities, including high school career days, Earth Day events, veterans' organizations, "read-to-me" days, field trips, Adopt-a-Highway programs, women's resource centers, science and social studies fairs, long-term care facilities, Hospice organizations, and many other efforts.

Arch subsidiaries also collaborate with — and provide support to — a broad array of conservation and outdoor organizations, which is an excellent complement to Arch's strong commitment to environmental stewardship. For instance, Arch operations partner with the National Wild Turkey Federation to support youth hunts, fishing days, recognition events, and other activities and work with the Rocky Mountain Elk Foundation to support habitat enhancement and elk management activities. An Arch subsidiary also participated in the Conservation Practices program of the U.S. Forest Service, contributing approximately \$100,000 of value via the construction of two floating docks at local reservoirs, among other activities.

During 2021, the Leer mine's giving fund donated backpacks full of school supplies to more than 500 elementary and pre-K students in Taylor County, West Virginia.

In addition to these activities, Arch operations sponsor and support a host of other significant causes each year, including drug abuse prevention efforts, blood drives, health-related community events such as Relay for Life, and numerous other efforts.

In total, Arch and its subsidiaries have contributed nearly \$2.4 million to charitable organizations and causes over the course of the past five years.

The employees of the corporation and its operating subsidiaries have a political action committee that helps amplify their collective voice on political matters of interest and concern. In addition, the organization engages and lobbies elected and public officials on issues of importance to the company, its operating subsidiaries and employees throughout those organizations.

Information on the company's political action committee can be found here: <https://www.fec.gov/data/committee/C00167668/>. Information on the company's lobbying activities can be found here: [LD-2 Disclosure Form \(house.gov\)](#). In addition, the company and its subsidiaries participate in a number of trade associations that engage in political outreach and advocacy, including the National Mining Association, the West Virginia Coal Association, the Wyoming Mining Association and the Colorado Mining Association.

Our Approach to People

Arch and its subsidiaries currently employ more than 3,400 people in the United States. We are an equal opportunity employer and strive to build and maintain a diverse workforce.

Arch has a market-based compensation program and actively benchmarks its hourly and salaried positions to ensure market alignment relative to our direct competitors for talent. In addition, Arch and its subsidiaries offer a comprehensive benefits package to all full-time employees. This package addresses the needs of its employees and their families in the areas of medical, prescription, dental, vision, life insurance and retirement. The company also offers multiple wellness incentives, programs and tools for the well-being of our employees and dependents.

Arch and its subsidiaries are committed to providing a fair and living wage to all employees, and provide some of the highest-paying jobs — as well as some of the most attractive benefits packages — in each of the communities in which they operate. The company recognizes employees' rights to collective bargaining and freedom of association.

In 2021, Arch commissioned its new, \$400 million Leer South mine, bringing total employment at the Leer and Leer South mine complexes to over 1,100 employees. As with each of Arch's mining operations, the Leer and Leer South mines provide some of the highest wage jobs in the northern West Virginia region and a highly competitive benefits package. Arch assists its employees in their retirement planning through an award-winning 401(k) plan that boasts a 95 percent company participation rate and an average employee account balance of \$146,000.



Strong Corporate Culture

93%

retention rate

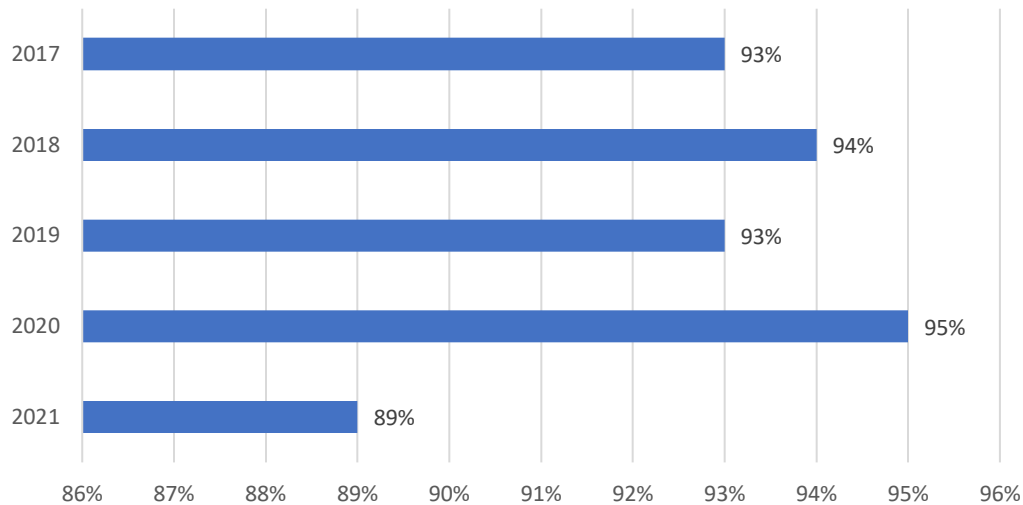
*Average combined
voluntary retention
rate by Arch and its
subsidiaries over the past
five years*

Arch's responsible and respectful corporate culture has allowed it to attract and retain an experienced, talented and high-performing workforce. The company and its subsidiaries had an average voluntary retention rate of 89 percent in 2021 and an average rate of 93 percent over the past five years. Approximately 40 percent of the company's workforce had at least 10 years of company service at the start of 2022.



Arch believes a diverse workforce is a higher-performing workforce, and our success in building a positive, respectful culture is evident in a 93-percent employee retention rate over the past five years.

Corporate-Wide Retention Rates



Arch recognizes the importance of furthering education and development of its employees through the various stages of their careers. To that end, the company offers free access to thousands of courses that are designed for personal and career development through an online education platform. A number of these courses are tailored so employees can earn Continuing Education Units (CEU), Professional Development Hours (PDH), and Professional Engineering (PE) Units to fulfill accreditation requirements. Additionally, all employees are eligible for a tuition reimbursement benefit through a program designed to encourage and support development of employee skills by providing financial assistance for an approved course of study. In the past five years, Arch's tuition reimbursement program totaled more than \$1.1 million. These programs reflect Arch's view that ongoing employee development is good business as well as a valuable benefit that can help attract and retain talented and skilled people.

Arch also works with universities and co-op programs to attract top candidates in key fields, while seeking to develop its in-house talent and providing opportunities for employees to increase their level of responsibility within the organization. In this way, Arch prepares a steady stream of leaders for ongoing succession and creates a strong bench. As part of this effort, employees participate in formal annual performance reviews, which create a valuable opportunity for feedback and communication on a range of matters, including career development, for both the manager and the employee.

Leadership Workshop Participation

430

workshop participants

Number of high-potential employees who have participated in leadership workshops in St. Louis over the past six years

Environmental and Safety Summit Participation

200

summit participants

Approximate number of subsidiary mine site and corporate employees who participate in annual environmental and safety summit

Arch also invests significantly in the development of its next generation of leaders. Over the past six years, Arch has designed and conducted ongoing multi-day leadership workshops designed to educate high-potential corporate and subsidiary employees about Arch's strategic direction, financial position, asset base and corporate culture, as well as to enhance leadership skillsets. Approximately 430 high-potential employees have participated in those workshops, with the company's senior management team and other senior leaders participating in the training sessions.

In addition, the company holds a safety and environmental stewardship summit at its headquarters location in Saint Louis each year. Approximately 200 employees from subsidiary mine sites as well as the senior leadership team and corporate employees participate in this summit each year, which creates opportunities

for sharing best practices across the operations while reinforcing the company's deep commitment to excellence in these critical areas of performance.

Arch's salaried employees, including new hires, are expected to complete annual online training on the company's Code of Business Conduct.

Ethical Conduct

Arch strives to adhere to the highest principles of business ethics and to foster a culture of integrity that infuses every business action and interaction. As part of this commitment, employees across all levels of the organization are educated on good corporate governance practices and ethical business conduct.

These ethics principles are reinforced in the company's Code of Business Conduct, which details the expectations for the Arch board of directors, the company's senior management team, and the entire Arch workforce. Every employee receives and is urged to study the code, and the company's salaried employees, including new hires, are expected to complete annual online training on its contents. Included in this training is a comprehensive set of anti-corruption policies and procedures, and a pledge to adhere to these policies. Key areas addressed in the code include marketplace integrity, anti-trust obligations, and best practices in federal and state lobbying activities.

In addition, employees that perform certain functions with a higher exposure to international activities — such as the sales force, legal team, purchasing department and accounting group — are trained in specific anti-corruption policies in accordance with the U.S. Foreign Corrupt Practices Act.

Arch's legal and human resources teams develop and conduct annual compliance training to enable the company's ethics policies and to strive to ensure that its commitments to diversity, respect and inclusion in the workplace are understood, followed and embraced. Required training programs covering topics such as workplace harassment prevention are delivered each year to managers and their employees to maintain high standards of awareness, action and compliance.

Arch's board of directors has a critical oversight role in nurturing an environment in which everyone in the organization embraces ethical business practices and adheres to both the spirit and the letter of the code. Arch's board shares the view that clear and responsible corporate governance policies are essential to the company's long-term success.

Arch strongly encourages employees to report any ethical misconduct or violation through the company's email or telephone hotlines. These lines of communication are maintained by an independent third party, and all reports are taken seriously and promptly investigated. When warranted, outside resources are secured and immediate action is taken.

In addition to the code, each Arch subsidiary requires a commitment from its employees to conduct themselves in a safe and ethical way, as set forth in their respective handbooks governing employee conduct. Specifically, each employee commits to comply with all safety, health and related laws and regulations, and to report violations or practices deemed unsafe or potentially harmful to the environment. Moreover, a fair treatment policy underscores each employee's obligation to fellow workers and the environment through written standards designed to maintain common, honest and decent behavior.

Safe and Respectful Work Environment Commitment



C = *Courage to stand up for oneself and others*

A = *Attitude that is positive and encouraging*

R = *Respect for others*

E = *Excellence in what employees do and say*

S = *Safety*

Arch C.A.R.E.S., which was implemented in 2019 across the organization, further reinforces the company's ongoing efforts to promote a safe and respectful work environment. The fundamentals of the program are: (C) Courage to stand up for oneself and others; (A) Attitude that is positive and encouraging; (R) Respect for others; (E) Excellence in what employees do and say; and (S) Safety. The program endeavors to further ingrain mutual respect as a core value in Arch's corporate culture. Just as employees are encouraged continuously — by the senior management team, operations management and their co-workers — to “work safely,” the Arch C.A.R.E.S. program reminds them to “work respectfully” and to strive for excellence.

Setting the Same High Standards for Suppliers

Arch requires suppliers to conduct business in the same ethical and responsible manner that it requires of its own employees and subsidiary operations, and implements these requirements in its supply contracts.

Arch Supplier Code of Conduct

This Supplier Code of Conduct sets forth the key principles under which suppliers to Arch Resources, Inc. and its subsidiaries (“Arch”) are required to operate.

Arch is committed to doing business ethically and safely and to following all laws that apply to it, and expects its suppliers to meet the same standards.

This Supplier Code of Conduct is to formalize Arch’s practices and to make clear that Arch expects those providing products and services to us (collectively, “Suppliers”) to meet the above commitment and help Arch maintain its reputation. Arch expects its Suppliers to follow the same ethical and environmental standards as are required of Arch employees, as set forth in its Code of Conduct found at <https://investor.archrsc.com/static-files/3ec96689-0631-4668-aa69-ddc1860788d7>.

Arch specifically expects its Suppliers to:

- Act with integrity
 - Suppliers are expected to never misrepresent or purposely omit material facts relating to Arch business or billings.
 - Suppliers are expected to deal fairly with Arch, its employees and other suppliers.
 - Suppliers are expected to not engage in the following activities:
 - Defaming or lying about a competitor’s business or products;
 - Making false statements; and
 - Obtaining information by inappropriate means.
 - Suppliers shall never offer or accept bribes, kickbacks, inappropriate gifts or hospitality, or other improper incentives in connection with Arch’s business.
 - Suppliers are expected to avoid any conflict of interest relating to financial interests or other arrangements with Arch employees that may be considered inappropriate.
- Follow the law
 - Suppliers shall know and follow the laws that apply to them and their business.
 - Suppliers are expected to treat legal requirements as a minimum standard.
 - Suppliers shall follow all applicable requirements related to safety and health, and shall notify Arch if a violation of such requirements occurs while the Supplier’s employees are on Arch’s premises.
 - Suppliers are expected to notify Arch as to any material issues with the goods and services they supply — especially health and safety issues.
 - Suppliers are expected to support Arch’s commitment to the environment by operating in full compliance with both the letter and the spirit of environmental laws and Arch policies and by actively encouraging care and regard for the environment.
- Keep accurate records
 - Suppliers’ books and records shall be accurate and clearly describe and identify the relevant facts or the true nature of the transaction with Arch, and properly and timely classify and record entries in compliance with accounting principles.

- All claims, vouchers, bills and invoices shall be accurate and proper.
- Time spent on Arch work shall be recorded and reported appropriately.
- Arch equipment and other property and resources are expected to be used only for Arch business.
- When Arch auditors or managers ask Suppliers to respond to requests, the responses are expected to be complete and truthful.
- Treat people with respect
 - Suppliers shall provide equal opportunity for employment and advancement on the basis of ability and aptitude without regard to race, color, religion, sex, national origin, age, disability, sexual orientation, gender identity or expression, or veteran status.
 - Suppliers are expected to recognize and compensate employees based on their performance.
 - Suppliers shall take affirmative action with respect to all employment practices affecting minorities, females, veterans and individuals with disabilities.
 - Suppliers shall provide benefits without regard to race, color, religion, sex, national origin, age, disability, sexual orientation, gender identity or veteran status.
 - Suppliers shall ensure that their employees do not engage in any conduct that creates an intimidating, hostile or offensive work environment.
- Protect Arch's information
 - Suppliers shall not use any Arch proprietary or confidential information, except as required by the work.
 - Suppliers shall not disclose Arch's proprietary or confidential information to any unauthorized person or company.
 - Suppliers shall take appropriate action to prevent the disclosure of any of Arch's confidential or proprietary information so that unauthorized persons do not have access to it.
 - If a data breach occurs, Suppliers are expected to immediately notify Arch, and take appropriate actions to mitigate the effect of the breach.

Arch considers its reputation for fairness and integrity to be one of its most valuable assets. We want to build trust-based relationships with our Suppliers who follow the above principles. We expect our Suppliers to cooperate with our requests for information and audit access. If a concern arises, our desire is to work with the Supplier to identify possible improvements. However, if a Supplier cannot or will not correct an issue, we reserve the right to end the relationship.

Statement on Human Rights

Respect for Human Rights is fundamental to the way Arch manages its business. Arch's Human Rights Statement, along with its Code of Business Conduct, represents the company's commitment to providing an inclusive work environment that makes safety and respect in the workplace the top priority in everything the company does, and applies enterprise-wide and across all of the company's operating subsidiaries. Arch's Statement on Human Rights is structured to reflect common principles found in the United Nations Universal Declaration of Human Rights, OECD Guidelines for Multinational Enterprises, and the UN Guiding Principles on Human Rights. The board of directors has oversight of all matters associated with the company's human rights policy, endorses the policy fully, and has ultimate responsibility for its effective application.

Arch's Human Rights Statement pledges the following:

- We do not tolerate any form of workplace discrimination, harassment or physical assault and we strive to make sure all employees, contractors, vendors and suppliers are treated fairly and with respect;
- We are committed to protecting the rights of women and minority groups, and we provide equal opportunity for employment and advancement on the basis of ability and aptitude without regard to race, color, religion, sex, national origin, age, disability, sexual orientation, gender identity or expression, or veteran status;
- We are committed to a diverse and inclusive workforce and take affirmative action with respect to all employment practices affecting minorities, females, veterans and individuals with disabilities;
- We do not tolerate child labor or any form of forced or compulsory labor, whether on behalf of Arch, its subsidiaries, vendors or suppliers;
- We expect our employees to report any suspected violation of the law, as well as any instances of unlawful harassment, safety concerns or human rights violations, through the established procedures in our Code of Business Conduct, which is distributed to all employees, and we have integrated this strong expectation for compliance and reporting into our continuous and comprehensive training efforts;
- We respect the human rights of all persons in the communities in which we conduct business as well as maintain our long-standing status as an industry leader in mine reclamation and environmental stewardship;
- We recognize the right to water as a fundamental human right, and we protect this critical natural resource through our water management systems, processes, and standards;
- We are committed to the principle of free, prior and informed consent with respect to any relationships with indigenous peoples' land and resources;
- We prohibit retaliation in any form for reporting any complaint in good faith; and
- We require that all of our subsidiary operations abide by the tenets of our Statement on Human Rights, and expect our suppliers, vendors and partners to do the same.

We are committed to engaging with our communities — including residents, businesses, landowners, government officials, Tribal Nations as applicable, and other stakeholders — on all potential impacts of our subsidiary operations, including human rights. Our strong and active community advisory panels at our largest metallurgical mines — as well as the other forums we use to engage our communities — provide important and effective channels for feedback from community members on a full range of critical issues, including human rights. We recognize that we must continually listen to stakeholder feedback as regards our human rights policy and performance in order to understand, prevent and mitigate any adverse impacts of our activities.

Our chief compliance officer is responsible for implementation and oversight of our human rights policies and programs. Our board of directors maintains ultimate oversight. With all of our subsidiary mining operations in the United States, the salient human rights risks we have identified are:

- Employee health and safety,
- Community health and safety, and
- Environmental quality and compliance.

We report our performance against these topics — as well as the extensive steps we are taking to mitigate the risks associated with these topics — in the Sustainability section of our website, which addresses a full range of environmental, social and governance matters. The steps we are taking to mitigate risks associated with employee health and safety are addressed most specifically at archrsc.com/sustainability/safety,

although many other segments of the Sustainability section of the Arch website are also pertinent. The steps we are taking to mitigate risks associated with community health and safety are addressed most specifically at archrsc.com/sustainability/community, although — again — many other sections of the Sustainability section of the Arch website are also pertinent. The steps we are taking to mitigate risks associated with environmental quality and compliance are addressed most specifically at archrsc.com/sustainability/water, archrsc.com/sustainability/air, archrsc.com/sustainability/land, archrsc.com/sustainability/climate and archrsc.com/sustainability/waste.



GOVERNANCE

Our Approach to Governance

We are committed to demonstrating the highest principles of corporate governance. We believe that strong, effective corporate governance policies and practices are the foundation of a well-functioning board and are vital to preserving the trust of our stakeholders, including our customers, suppliers, employees and stockholders, as well as regulators and the general public.

Our board has adopted Corporate Governance Guidelines that set forth a framework within which the board, assisted by its committees, directs the affairs of the company. These guidelines address, among other items, the composition and functions of the board, director independence, compensation of directors, and director qualification standards. The company's Code of Business Conduct is applicable to all employees of the company, including the principal executive officer, the principal financial officer and the principal accounting officer, as well as all directors of the company.

Our board regularly reviews these governance policies and modifies them as warranted based upon Delaware law, the rules and listing standards of the New York Stock Exchange and SEC regulations, as well as best practices recommended by recognized governance authorities.

All board members are elected annually. The board has three standing committees — Audit, ESG and Nominating, and Personnel and Compensation — all of which are comprised entirely of independent directors.

The Arch board meets in executive session — with only independent directors in attendance — on a regular basis. The board conducts annual self-evaluations at both the full board and individual committee levels.

The board is well-versed in environmental, social, and governance (ESG) issues, and such issues are deliberated at every regularly scheduled board meeting.

Arch's board is fully committed to the company's vision of being a safe and environmentally responsible supplier of coal-based resources and to its other ESG initiatives, including community engagement and promoting a corporate culture of respect and inclusion.

The board provides critical oversight of the corporation's comprehensive and robust enterprise risk management (ERM) system — including climate-related risks and opportunities — and is committed to setting the tone at the top on environmental, social and governance (ESG) matters. ESG risks, such as those related to safety, environmental performance and human capital management, are a top priority for the board. These risks, and our ability to mitigate them, are evaluated and factored into our strategy and business plan. As such, the full board is actively engaged in overseeing these risks, as well as opportunities related to ESG matters. Each member of the board is well-versed in how these risks may impact us, and the board is regularly updated by management on company performance related to ESG matters and mitigation of associated risks.

In 2021, our board took steps to enhance its ESG governance framework to gain efficiencies and re-emphasize the board's commitment to continuous improvement in ESG. The board designated ESG oversight responsibility to its standing corporate governance and nominating committee. To promote the appropriate emphasis on ESG and set the right "tone at the top" of the organization, the board renamed the committee the Environmental, Social, Governance and Nominating Committee, also referred to as the ESG and Nominating Committee.

We regularly conduct shareholder outreach on matters such as executive compensation, corporate governance, ESG responsibility and other current and emerging issues, and take action on key learnings related to this outreach.

All employees, including the company's officers and directors, are expected to follow our Code of Business Conduct. A compliance hotline is available to employees for reporting potential violations of the code on an anonymous basis.

SASB Alignment Report

This report provides Arch Resources' disclosure alignment with the recommendations of the Sustainability Accounting Standards Board (SASB) Coal Operations standard.



Sustainability Accounting Standards Board (SASB) Index

SASB is an independent, private sector standards-setting organization dedicated to improving the effectiveness and comparability of corporate disclosures on environmental, social and governance factors. The table below cross-references the SASB accounting metrics with where that information can be found in Arch Resources' reporting.

Accounting Metric	Code	Disclosure
Greenhouse Gas Emissions		
Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations	EM-CO-110a.1	4.518 million metric tons Scope 1 CO ₂ e; none is covered under a carbon fee or tax <i>For more information, please see: archrsc.com/sustainability/climate</i>
Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	EM-CO-110a.2	Arch recognizes the importance of reducing greenhouse gas emissions on a systematic and sustained basis and has taken significant steps in recent years to reduce its carbon footprint. The company's pivot towards steel markets — and towards higher quality but lower volume metallurgical products — has driven significant reductions in its emissions profile as well. <i>For a detailed discussion on our climate strategy, including short-, medium- and long-term emissions reduction strategy, please see: archrsc.com/sustainability/climate</i>
Water Management		
(1) Total fresh water withdrawn, (2) percentage recycled, (3) percentage in regions with High or Extremely High Baseline Water Stress	EM-CO-140a.1	(1) 2,658 million gallons (2) 42.13% (3) 0% <i>For details, please see: archrsc.com/sustainability/water</i>

Number of incidents of non-compliance associated with water quality permits, standards, and regulations	EM-CO-140a.2	<p>Arch performed over 134,000 water quality tests in 2021 with zero exceedances. Arch's 100 percent compliance record sets the standard for the U.S. industry.</p> <p><i>For details, please see:</i> archrsc.com/sustainability/water</p>
Waste Management		
Number of tailings impoundments, broken down by MSHA hazard potential	EM-CO-150a.1	<p>Ten tailings facilities, five of which are classified as Class C, or high hazard potential, according to MSHA</p> <p><i>For more information, please see:</i> archrsc.com/sustainability/waste</p>
Biodiversity Impacts		
Description of environmental management policies and practices for active sites	EM-CO-160a.1	<p>Arch and its subsidiary operations are committed to evaluating all projects for potential impacts to critical habitats, as defined by the U.S. Endangered Species Act (ESA). While some aspects of the mining process may temporarily disturb existing natural systems, we view it as our obligation to minimize these impacts and to return the natural systems to their pre-mining natural resource value. Specifically, when the appropriate post-mine land use is determined to be "wildlife habitat," areas are restored in a manner that achieves the approximate original contour of the land while ensuring that prevailing wildlife species are properly supported.</p> <p><i>For details on our approach to Biodiversity, please refer to:</i> archrsc.com/sustainability/land</p>
Percentage of mine sites where acid rock drainage is: (1) predicted to occur, (2) actively mitigated, and (3) under treatment or remediation	EM-CO-160a.2	<p>Acid rock drainage is: 1) predicted to occur at one outlet (equating to 2.1 percent of the total number) out of 48 active constructed outlets; 2) actively mitigated at 47 of 48 active constructed outlets; and 3) under treatment or remediation at the one site referenced above where acid rock drainage is predicted to occur.</p> <p><i>For details on our approach to Biodiversity, please refer to:</i> archrsc.com/sustainability/land</p>

Percentage of (1) proved and (2) probable reserves in or near sites with protected conservation status or endangered species habitat	EM-CO-160a.3	Approximately 7.05% of Arch's proved and probable reserves are in or near sites with protected conservation status or endangered species habitat.
Rights of Indigenous Peoples		
Percentage of (1) proved and (2) probable reserves in or near indigenous land	EM-CO-210a.1	Arch has no proved or probable reserves in or near indigenous lands.
Discussion of engagement processes and due diligence practices with respect to the management of indigenous rights	EM-CO-210a.2	<p>We are committed to the principle of free, prior and informed consent with respect to any relationships with indigenous peoples' land and resources. We are committed to engaging with our communities – including residents, businesses, landowners, government officials, Tribal Nations as applicable, and other stakeholders – on all potential impacts of our subsidiary operations, including human rights.</p> <p><i>For details on our approach to Rights of Indigenous Peoples, please see:</i> archrsc.com/sustainability/people</p>
Community Relations		
Discussion of process to manage risks and opportunities associated with community rights and interests	EM-CO-210b.1	<p>Arch takes its obligations to community engagement and outreach seriously. Our goal is to be as responsive as possible to community concerns, and to work with neighbors and community leaders to address and allay such concerns to the fullest extent possible.</p> <p><i>For details on our approach to Community Relations, please see:</i> archrsc.com/sustainability/community</p>
Number and duration of non-technical delays	EM-CO-210b.2	Neither Arch nor its subsidiaries experienced a non-technical delay in 2021.
Labor Relations		
Percentage of active workforce covered under collective bargaining agreements, broken down by U.S. and foreign employees	EM-CO-310a.1	Neither Arch nor any of its subsidiaries have a workforce covered under collective bargaining agreements.

Number and duration of strikes and lockouts	EM-CO-310a.2	Neither Arch nor its subsidiaries have experienced a strike or lockout at any operation over the course of the past 15 years.
Workforce Health & Safety		
(1) MSHA All-Incidence rate, (2) fatality rate, and (3) near miss frequency rate (NMFR)	EM-CO-320a.1	<p>During the past five years, Arch and its subsidiaries have recorded: an average MSHA all-incidence rate of 1.29; a fatality rate of 0.015; and a near-miss frequency rate of 12.59.</p> <p><i>For details on our approach to Workforce Health & Safety, please see:</i> archrsc.com/sustainability/safety</p>
Discussion of management of accident and safety risks and long-term health and safety risks	EM-CO-320a.2	<p>Safety is a deeply engrained value at Arch. We have made zero safety incidents at every operation every year our single, highest priority.</p> <p>Across the organization, we engage in a proactive, behavior-based approach to safety. Every field employee participates in safety training on an ongoing basis, and nearly 100 percent of our field employees have been trained as safety observers. If an at-risk behavior or a barrier to safe behavior is identified, employees are empowered to engage and to apply their training to resolve the potentially unsafe condition or practice immediately. During 2021, Arch's operating subsidiaries recorded more than 258,000 written safety observations and 115,000 written pre-job risk assessments, along with countless verbal ones.</p> <p><i>For details on our approach to Workforce Health & Safety, please see:</i> archrsc.com/sustainability/safety</p>
Reserves Valuation & Capital Expenditures		
Sensitivity of coal reserve levels to future price projection scenarios that account for a price on carbon emissions	EM-CO-420a.1	Not reported
Estimated carbon dioxide emissions embedded in proven coal reserves	EM-CO-420a.2	Not reported

Discussion of how price and demand for coal and/or climate regulation influence the capital expenditure strategy for exploration, acquisition, and development of assets	EM-CO-420a.3	<p>Arch believes that the accelerating global effort to combat climate change and to build a low-carbon economy is creating — and will continue to create — significant, value-driving opportunities for smart, well-positioned resource providers. In keeping with this longstanding view, Arch initiated a strategic pivot more than a decade ago with the objective of intensifying our focus on steel and metallurgical markets, which we believe will be significant beneficiaries of global de-carbonization efforts.</p> <p>Arch's strategic pivot is also acting to mitigate our principal climate-related risk — the world's shift away from thermal coal as a primary source of power generation. As we have expanded our metallurgical portfolio, we have correspondingly reduced our thermal coal asset base via asset sales, mine closures and the continuous streamlining and rightsizing of our thermal portfolio. Over the past decade, we have reduced our thermal coal output by 60 percent — from 163 million tons sold in 2010 to 66 million tons sold in 2021 — and continue to drive forward with further reductions.</p> <p><i>For a detailed discussion on our climate strategy, please see: archrsc.com/sustainability/climate</i></p>
Activity Metrics		
Production of thermal coal	EM-CO-000.A	<p>65.9 million short tons (including thermal byproduct produced by our metallurgical segment) in 2021</p> <p><i>See our 10-K for more information</i></p>
Production of metallurgical coal	EM-CO-000.B	<p>7.0 million short tons of metallurgical coal (excluding thermal byproduct produced by our metallurgical segment) in 2021</p> <p><i>See our 10-K for more information</i></p>

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For more information, please visit archrsc.com/sustainability

TCFD Alignment Report

This report provides Arch Resources' disclosure alignment with the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD) framework.



Task Force on Climate-Related Financial Disclosures (TCFD) Index

Arch Resources acknowledges that climate change represents a significant risk to our business and has undertaken a strategic transition to mitigate this risk. Our board of directors oversees and our management team manages climate change-related risks and our related pivot towards steel markets and our drive toward significant reductions in our emissions profile.

Governance

Board oversight – Our board of directors oversees an enterprise-wide approach to risk management. ESG risks, including those related to climate and environmental performance, are a top priority for the board. These risks, and the company’s ability to mitigate them, are evaluated and factored into the company’s strategy and business plan. In 2021, our board took steps to enhance its ESG governance framework to gain efficiencies and re-emphasize the board’s commitment to continuous improvement in ESG. The board designated ESG oversight responsibility to its standing corporate governance and nominating committee. To promote the appropriate emphasis on ESG and set the right “tone at the top” of the organization, the board renamed the committee the Environmental, Social, Governance and Nominating Committee, also referred to as the ESG and Nominating Committee. Environmental performance and key metrics are discussed at every board meeting.

Management oversight – Our senior leadership, including our CEO, regularly discusses risks and opportunities including those related to environmental issues, and how to apply policies and strategies to address those risks and opportunities in each aspect of the business.

Because the company’s environmental and operational activities are inextricably intertwined, our chief operating officer acts as our environmental lead with the assistance and support of the company’s entire operational and environmental leadership. The chief operating officer reports directly to the chief executive officer, who provides further oversight and direction in this critical area of performance, and both the chief operating officer and the chief executive officer report to the board of directors on critical areas of environmental performance and on key environmental metrics at every regularly scheduled board meeting. Our senior vice president of strategy leads the company’s broader ESG efforts, reports directly to the CEO, and reports to the board of directors and the new ESG and Nominating Committee on a regular basis.

Strategy

We have identified climate change-related risks and opportunities that may impact our business over the short-, medium- and long-term. The nature of these risks depends on the physical aspects of climate change, market regulations, investor and societal pressure to reduce our carbon footprint and our ability to understand and respond to rapidly evolving developments. Our identified risks include the following:

Business risks – Our principle climate-related risk is the world’s shift away from thermal coal as a primary source of power generation. We have expanded our metallurgical portfolio and reduced our thermal coal

asset base via asset sales, mine closures and rightsizing of our thermal portfolio – reducing our thermal coal output by 60% since 2013. We continue to focus on the impact of this systematic and ongoing transition, and the resulting need for key stakeholders – including employees, coal communities and economically sensitive power consumers – to adjust to a changing landscape.

Regulatory risks – Climate change could pose regulatory risks such as through potential future carbon disclosure and compliance requirements, including possible carbon taxes, or regulatory incentives to encourage the use of alternative, lower-carbon energy sources. Regulatory action could both impact us indirectly via requirements on customers who use our products, and directly through regulations of our operations.

Reputational risk – The physical aspects of climate change can have an impact on our ability to continue operations (which we view as part of reputational risk) although we do not believe they pose significant financial impact. We do, however, regularly assess how we might be influenced by a changing climate and take seriously the potential for business disruption which could occur under extreme weather and natural disasters and reputational risks from not proactively addressing climate change issues. These risks and responses are reviewed as part of the overall sustainability risk evaluation.

We have also identified the following opportunities for our business:

Shift toward higher quality metallurgical products that drive emission reduction and play a critical role in a lower-carbon economy: Our metallurgical products are essential to the primary production of steel as a reducing agent for iron ore. Steel is a highly recyclable resource, and we expect primary steel to play an essential role in the development of critical infrastructure and construction of a new, lower-carbon economy supported by mass transit systems, wind turbines and electric vehicles. While steel producers will ultimately need to de-carbonize entirely, we expect metallurgical coal to continue to play a critical role in steel production for the next two decades or more.

Opportunities to reduce our own energy intensity: We are taking actions to reduce energy intensity in our mine operations, including reducing our need to draw electric power from the grid, which supports cost savings and more efficient operations.

Risk management

Our process for integrating risk management throughout the business includes identifying, evaluating and addressing ESG risks and opportunities on a regular basis. The risks and impacts associated with our business require effective collaboration among departments, business units and external stakeholders.

Our board of directors and company leadership are focused on overseeing, managing and mitigating various risks to our business and financial performance, including climate change-related risks. Such risk management topics are reviewed and discussed on a regular basis among our leadership team across the entire organization. Consideration of such risks is implemented as part of our operating and investment decision-making process in all aspects of the business as part of our standard risk management approach.

Metrics

Arch has been tracking carbon emissions from operations for more than 10 years; the company tracks Scope 1 and 2 emissions including power purchases, materials usage, fuel utilization and anthropogenic sources across its operations.

Arch also calculates and discloses Scope 3 emissions from extraction and production of purchased materials, transportation of purchased fuels and use of sold products and services.

Emissions in 2021:

- Scope 1 emissions – 4,518 thousand metric tons CO₂e
- Scope 2 emissions – 313 thousand metric tons CO₂e
- Scope 3 emissions – (based on estimates) range from 127.7 to 148.5 million metric tons of CO₂e

Arch is targeting a significant reduction in CO₂e emissions, and plans to publish long-term reduction targets in the near future.

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For more information, please visit archrsc.com/sustainability

CAUTIONARY NOTICE REGARDING FORWARD-LOOKING STATEMENTS

This report contains “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended - that is, statements related to future, not past, events. In this context, forward-looking statements often address our expected future business and financial performance, and future plans, including our sustainability objectives, commitments, plans, programs, targets, goals and strategies, and often contain words such as “should,” “could,” “estimates,” “project,” “target,” “expects,” “may,” “plans,” “believes,” “seeks,” “strives,” “will” or variations of such words or similar words. Actual results or outcomes, including the sustainability objectives, targets and commitments set forth in this report, may vary significantly, and adversely, from those anticipated due to many factors, including: unexpected delays, difficulties, and expenses in executing against the objectives, targets and commitments identified in this report; unexpected cost increases or technical difficulties in constructing, developing, maintaining or modifying sites, technologies or processes; technological innovations; impacts of the COVID-19 pandemic; changes in coal prices, which may be caused by numerous factors beyond our control, including changes in the domestic and foreign supply of and demand for coal and the domestic and foreign demand for steel and electricity; volatile economic and market conditions; operating risks beyond our control, including risks related to mining conditions, mining, processing and plant equipment failures or maintenance problems; weather, natural disasters and climate-related events; the unavailability of raw materials, equipment or other critical supplies, mining accidents, and other inherent risks of coal mining that are beyond our control; the degree to which necessary data can be gathered and verified; loss of availability, reliability and cost-effectiveness of transportation facilities and fluctuations in transportation costs; inflationary pressures and availability and price of mining and other industrial supplies; the effects of foreign and domestic trade policies, actions or disputes on the level of trade among the countries and regions in which we operate, the competitiveness of our exports, or our ability to export; competition, both within our industry and with producers of competing energy sources, including the effects from any current or future legislation or regulations designed to support, promote or mandate renewable energy sources; alternative steel production technologies that may reduce demand for our coal; the loss of key personnel or the failure to attract additional qualified personnel and the availability of skilled employees and other workforce factors; our ability to secure new coal supply arrangements or to renew existing coal supply arrangements; the loss of, or significant reduction in, purchases by our largest customers; disruptions in the supply of coal from third parties; risks related to our international growth; our relationships with, and other conditions affecting our customers and our ability to collect payments from our customers; the availability and cost of surety bonds, including potential collateral requirements; additional demands for credit support by third parties and decisions by banks, surety bond providers, or other counterparties to reduce or eliminate their exposure to the coal industry; inaccuracies in our estimates of our coal reserves; defects in title or the loss of a leasehold interest; losses as a result of certain marketing and asset optimization strategies; cyber-attacks or other security breaches that disrupt our operations, or that result in the unauthorized release of proprietary, confidential or personally identifiable information; our ability to acquire or develop coal reserves in an economically feasible manner; our ability to comply with the restrictions imposed by our financing or insurance arrangements; our ability to service our outstanding indebtedness and raise funds necessary to repurchase our convertible notes for cash following a fundamental change or to pay any cash amounts due upon conversion; existing and future legislation and regulations affecting both our coal mining operations and our customers’ coal usage, governmental policies and taxes, including those aimed at reducing emissions of elements such as mercury, sulfur dioxides, nitrogen oxides, particulate matter or greenhouse gases; increased pressure from political and regulatory authorities, along with environmental and climate change activist groups, and lending and investment policies adopted by financial institutions and insurance companies to address concerns about the environmental impacts of coal combustion; increased attention to environmental, social or governance matters (“ESG”); our ability to obtain and renew various permits necessary for our mining operations; risks related to regulatory agencies ordering certain of our mines to be temporarily or permanently closed under certain circumstances; risks related to extensive environmental regulations that impose significant costs on our mining operations, and could result in litigation or material liabilities; the accuracy of our estimates of reclamation and other mine closure obligations; the existence of hazardous substances or other environmental contamination on property owned or used by us; and risks related to tax legislation and our ability to use net operating losses and certain tax credits; and our ability to pay base or variable dividends in accordance with our announced capital return program. All forward-looking statements in this report, as well as all other written and oral forward-looking statements attributable to us or persons acting on our behalf, are expressly qualified in their entirety by the cautionary statements contained in this section and elsewhere in this report. These factors are not necessarily all of the important factors that could cause actual results or outcomes to vary significantly, and adversely, from those anticipated at the time such statements were first made. These risks and uncertainties, as well as other risks of which we are not aware or which we currently do not believe to be material, may cause our actual future results and outcomes to be materially, and adversely, different than those expressed in our forward-looking statements. For these reasons, readers should not place undue reliance on any such forward-looking statements. These forward-looking statements speak only as of the date on which such statements were made, and we do not undertake, and expressly disclaim, any duty to update our forward-looking statements, whether as a result of new information, future events or otherwise, except as may be required by the federal securities laws. For a description of some of the risks and uncertainties that may affect our future results, you should see the “Risk Factors” in Item 1A of our most recent Annual Report on Form 10-K and subsequent Form 10-Q and current report on Form 8-K filings made with the Securities Exchange Commission (“SEC”). Furthermore, while future events discussed in this report may be significant, any significance should not be read as necessarily rising to the level of the definition of materiality used for the purposes of certain disclosures required to be included in our SEC filings. Moreover, given the uncertainties, estimates and assumptions inherent in the matters discussed in this report, and the timelines involved, materiality is inherently difficult to assess far in advance. In addition, given the inherent uncertainty of the estimates, assumptions and timelines associated with the matters discussed in this report, we may not be able to anticipate in advance whether or the degree to which we will or will not be able to meet our plans, targets or goals. In addition, non-financial information, such as that included in parts of this report, is subject to greater potential limitations than financial information, given the methods used for calculating or estimating such information. The company has not and does not intend to independently verify third-party data contained in this report or used in the estimates and assumptions necessary to the matters discussed in this report.

In addition, many of the standards and performance metrics used and referred to in the objectives, targets and commitments set forth or referred to in this report continue to evolve and are based on management expectations and assumptions believed to be reasonable at the time of preparation, but should not be considered guarantees. The standards and performance metrics used, and the expectations and assumptions they are based on, have not unless otherwise expressly specified, been verified by any third party.