

A futuristic electric car is shown from a front-quarter view, parked at a charging station. The car has glowing blue lights on its front and side. The background is a sunset or sunrise sky with a bright sun low on the horizon. The charging station is a tall, dark pillar with a glowing blue screen and a charging cable icon.

# INVESTOR PRESENTATION

Second Quarter 2023





# DISCLAIMER

## Forward Looking Statements:

The information in this presentation includes "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act") and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). All statements, other than statements of historical fact included in this presentation, regarding our strategy, future operations, financial position, estimated revenue and losses, projected costs, prospects, plans and objectives of management are forward-looking statements. When used in this presentation, the words "could," "believe," "anticipate," "intend," "estimate," "expect," "project" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain such identifying words. These forward-looking statements are based on management's current expectations and assumptions about future events and are based on currently available information as to the outcome and timing of future events. When considering forward-looking statements, you should keep in mind the risk factors and other cautionary statements described under, but not limited to, the heading "Risk Factors" included in Ramaco's Quarterly Report and elsewhere in the Annual Report on Form 10-K.

## Forward-looking statements may include statements about:

- risks related to the impact of the novel coronavirus ("COVID-19") global pandemic, such as the scope and duration of the outbreak, the health and safety of our employees, government actions and restrictive measures implemented in response, delays and cancellations of customer sales, supply chain disruptions and other impacts to the business, or our ability to execute our business continuity plans;
- anticipated production levels, costs, sales volumes and revenue;
- timing and ability to complete major capital projects;
- economic conditions in the metallurgical coal and steel industries generally, including any near-term or long-term downturn in these industries as a result of the COVID-19 global pandemic and related actions;
- expected costs to develop planned and future mining operations, including the costs to construct necessary processing, refuse disposal and transport facilities;
- estimated quantities or quality of our metallurgical coal reserves;
- our ability to obtain additional financing on favorable terms, if required, to complete the acquisition of additional metallurgical coal reserves as currently contemplated or to fund the operations and growth of our business;
- maintenance, operating or other expenses or changes in the timing thereof;
- the financial condition and liquidity of our customers;
- competition in coal markets;
- the price of metallurgical coal or thermal coal;
- compliance with stringent domestic and foreign laws and regulations, including environmental, climate change and health and safety regulations, and permitting requirements, as well as changes in the regulatory environment, the adoption of new or revised laws, regulations and permitting requirements;
- potential legal proceedings and regulatory inquiries against us;
- the impact of weather and natural disasters on demand, production and transportation;
- purchases by major customers and our ability to renew sales contracts;
- credit and performance risks associated with customers, suppliers, contract miners, co-shippers and traders, banks and other financial counterparties;
- geologic, equipment, permitting, site access and operational risks and new technologies related to mining;
- transportation availability, performance and costs;
- availability, timing of delivery and costs of key supplies, capital equipment or commodities such as diesel fuel, steel, explosives and tires;
- timely review and approval of permits, permit renewals, extensions and amendments by regulatory authorities;
- our ability to comply with certain debt covenants;
- tax payments to be paid for the current fiscal year;
- our expectations relating to dividend payments and our ability to make such payments;
- the anticipated benefits and impacts of the Ramaco Coal, LLC ("Ramaco Coal") and Maben acquisitions;
- risks related to Russia's recent invasion of Ukraine and the international community's response;
- risks related to weakened global economic conditions and inflation; and
- other risks identified in this Quarterly Report that are not historical.

We caution you that these forward-looking statements are subject to a number of risks, uncertainties and assumptions, which are difficult to predict and many of which are beyond our control, incident to the development, production, gathering and sale of coal. Moreover, we operate in a very competitive and rapidly changing environment and additional risks may arise from time to time. It is not possible for our management to predict all of the risks associated with our business, including those described under the heading "Risk Factors" included in Ramaco's Annual Report on Form 10-K, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. Although we believe that our plans, intentions and expectations reflected in or suggested by the forward-looking statements we make in this presentation are reasonable, we can give no assurance that these plans, intentions or expectations will be achieved or occur, and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements. Given these risks and uncertainties, investors should not place undue reliance on forward-looking statements as a prediction of actual results.

All forward-looking statements, expressed or implied, included in this presentation are expressly qualified in their entirety by this cautionary statement. This cautionary statement should also be considered in connection with any subsequent written or oral forward-looking statements that we or persons acting on our behalf may issue. Except as otherwise required by applicable law, we disclaim any duty to update any forward-looking statements, all of which are expressly qualified by the statements in this section, to reflect events or circumstances after the date of this presentation.



# RAMACO AT A GLANCE

## Key Highlights

- ④ **“Pure play” metallurgical coal company**  
Metallurgical coal is a key component in the production of steel, which is crucial to infrastructure development, electric vehicles, and the energy transition.
- ④ **Strong Growth Trajectory**  
Targeting production of ~6.5 million tons by 2026, up from ~0.5 million tons produced in 2017.
- ④ **Strong Financial Performance**  
2022 net income was a record at \$116 million. 2022 Adjusted EBITDA increased 159% to \$205 million<sup>1</sup>. With only \$123 million in capex, the company generated strong FCF.
- ④ **Attractive Capital Structure**  
We have minimal AROs, net debt and legacy liabilities, as well as strong free cash flow generation.
- ④ **Rare Earth Element Optionality**  
Despite our recent Rare Earth Element discovery, METC is currently trading in-line with its coal peers at just ~2x trailing EV/EBITDA.

## Dual Class Structure

Two Ways to Play

- 1 METC: Met Coal Operations**

  - Pure-play, low-cost met coal producer, with strong production growth
  - Exciting recent Rare Earth Element discovery
  - Attractive dividend
- 2 METCB: Class B Common Stock**

  - Attractive Royalty Stream and Infrastructure income
  - Exposure to Rare Earth Element and Carbon Product opportunities
  - Favorable dividend strategy

## The Path Forward

- ④ We expect continued production and free cash flow **growth from our core metallurgical coal business.**
- ④ We recently announced independent findings from NETL and Weir International that our Brook Mine in Sheridan, WY possesses a significant unconventional deposit of **Rare Earth Elements**, with high relative concentrations of Neodymium, Praseodymium, Terbium and Dysprosium.
- ④ Our **Class B common Stock**, was distributed on June 21, 2023. We expect total current METC + Class B dividends to be over \$32 million on an annualized basis by 4Q23.<sup>(2)</sup>

## Key US Supplier of Critical Materials

Ramaco is a low-cost, “pure play” metallurgical coal company. Our core product is a key component in the production of primary steel. Metallurgical coal is not used in power generation. We have a strong pipeline to more than double production. When combined with our Rare Earth Element deposit, Ramaco has the potential to be a major US supplier of critical materials for many decades.

### Key Highlights

**100%**  
Revenue Growth  
In 2022

**192%**  
Net Income Growth  
In 2022

**159%**  
EBITDA Growth  
In 2022

**\$108 MM**  
Net Debt  
6/30/23

**\$31 MM**  
AROs & Legacy Liabilities  
6/30/23

**5% Dividend Yield**  
Current METC/METCB  
Combined Dividend  
Yield

(1) See “Reconciliation of Non-GAAP Measures” in the Appendix. (2) Detail can be found in the final prospectus dated June 15, 2023 as filed with the U.S. Securities and Exchange Commission on such date.

# RAMACO RESOURCES BUSINESS LINES

Multiple Ways to Invest in our Businesses; Each With Unique Value Characteristics



**Ramaco Resources recently distributed a new class of common stock, the Class B common stock (Ticker: METCB). This was distributed to existing shareholders to provide holders with direct participation in the financial performance of the CORE assets (as defined below). Under the dual class structure, METC represents the interest in the mining operations of both Met coal mining and Rare Earth Elements, while METCB represents an interest in the Coal Infrastructure Assets, Coal Royalties, potential future Royalties from Rare Earth Elements, and IP Licensing from Advanced Carbon Products.**

## METC - Met Coal Operations

- ④ Large, high-quality met coal reserve base. Goal of more than doubling production to 6.5 millions tons per year.
- ④ Among the lowest cost domestic met coal producers (first quartile of the cost curve). Committed to maintaining its position on the low-end of the cost curve over the long-term.
- ④ Well-positioned to transact into both domestic and export markets. Diversified existing customer base, having sold into North America, South America, Europe, Asia, and Africa on a regular basis.
- ④ Advantaged infrastructure and geographic flexibility.
- ④ A deposit of rare earth elements which has the potential for being developed into an important domestic source.
- ④ Class A Common Stock (METC); general dividend. Current dividend yield of 5%.

## METCB - CORE

- ④ CORE stands for “Carbon Ore – Rare Earth”.
- ④ Significant income from non-cost bearing royalties on coal reserves mined primarily by Ramaco. This income is tied to coal prices and production growth.
- ④ Significant fixed fee-based income from Ramaco’s preparation plants and rail loadouts. This income is tied to Ramaco’s production growth.
- ④ Potential future royalties from a deposit of rare earth elements which may be developed into an important domestic source.
- ④ Potential future IP licensing income from leading technology to convert coal into carbon products.
- ④ Class B Common Stock (METCB); dividend associated with CORE. Current forward dividend yield of 6%.

# RAMACO TRACK RECORD OF PERFORMANCE

Strong 5-year track record of consistent execution



Since initial production began in 2017, METC has consistently executed on its plan to grow production and generate strong free cash flow conversion which can be distributed to shareholders.



Coal production has grown to 2.7MM tons in 2022 from 0.5MM tons in 2017, with a target of 6.5MM tons by 2026.

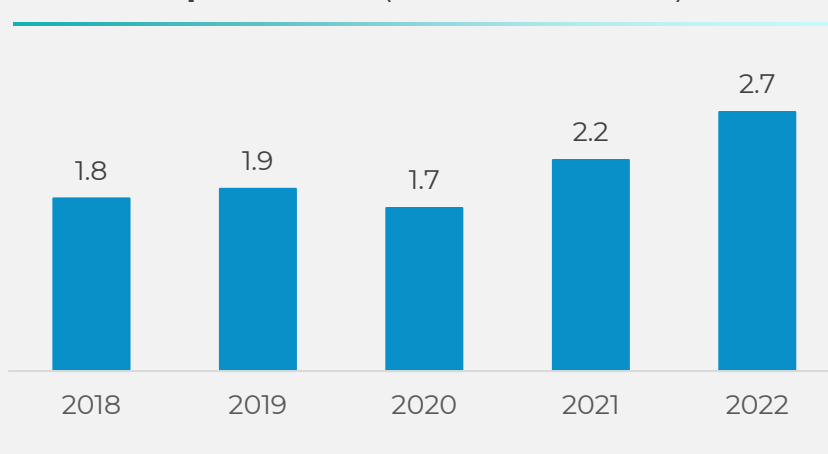


Adjusted EBITDA has grown meaningfully in recent years on increased volumes and favorable pricing.

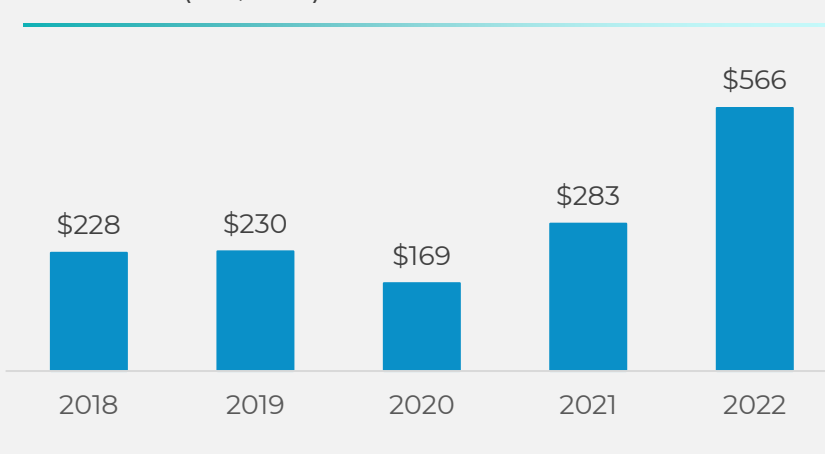


METC has invested significant growth capex in recent years, which should allow for strong FCF conversion as production ramps and capex declines.

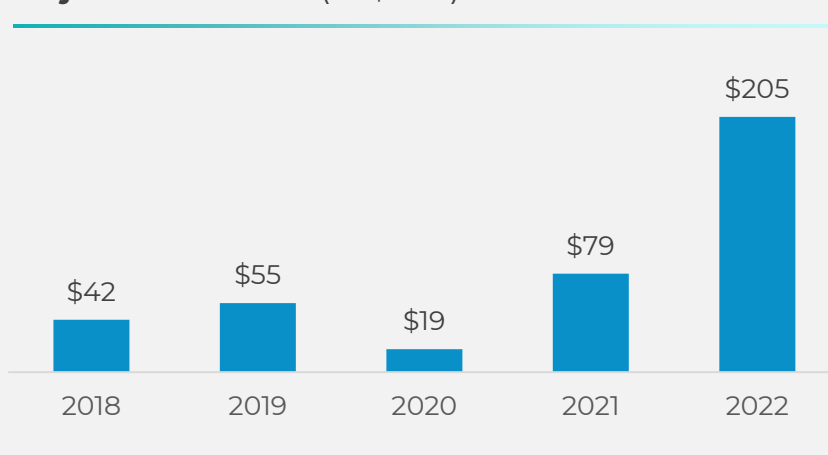
**Total coal production** (in millions of tons)



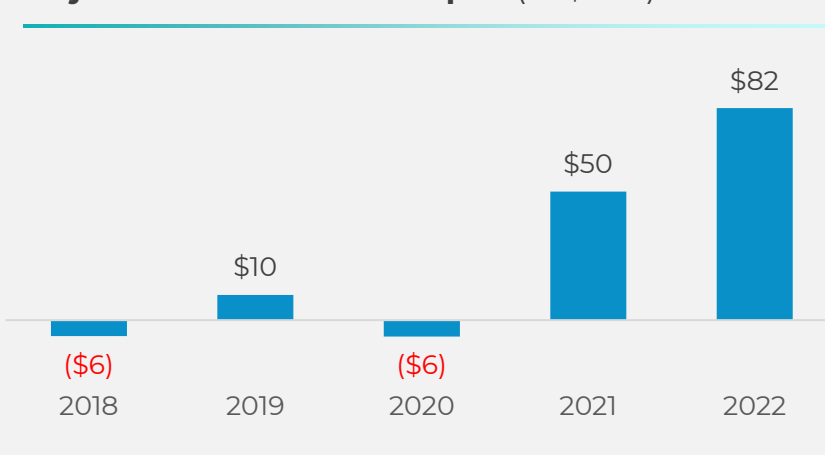
**Revenue** (in \$MM)



**Adjusted EBITDA<sup>1</sup>** (in \$MM)



**Adjusted EBITDA<sup>1</sup> less Capex** (in \$MM)

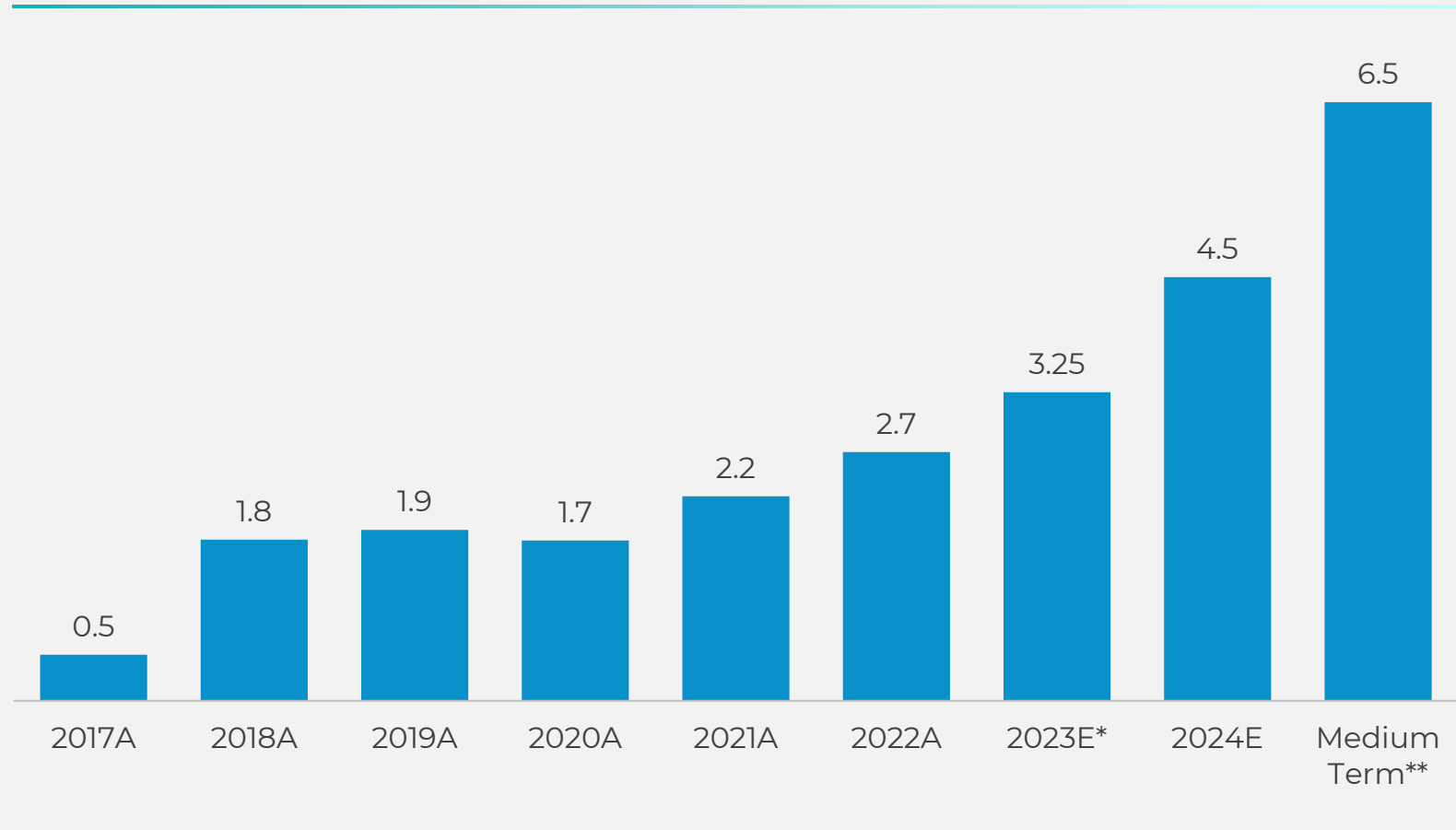


(1) See "Reconciliation of Non-GAAP Measures" in the Appendix.



# MEDIUM-TERM POTENTIAL TO MORE THAN DOUBLE PRODUCTION

Ramaco annual production (in millions of tons)



- ✓ The Company anticipates reaching its original goal of achieving 4 million tons of annualized sales in 4Q23.
- ✓ We have the ability to increase production to over 5 million tons by 2024, should we choose to accelerate some growth projects.
- ✓ Furthermore, the Company anticipates growing production to 6.5 million tons by 2026.

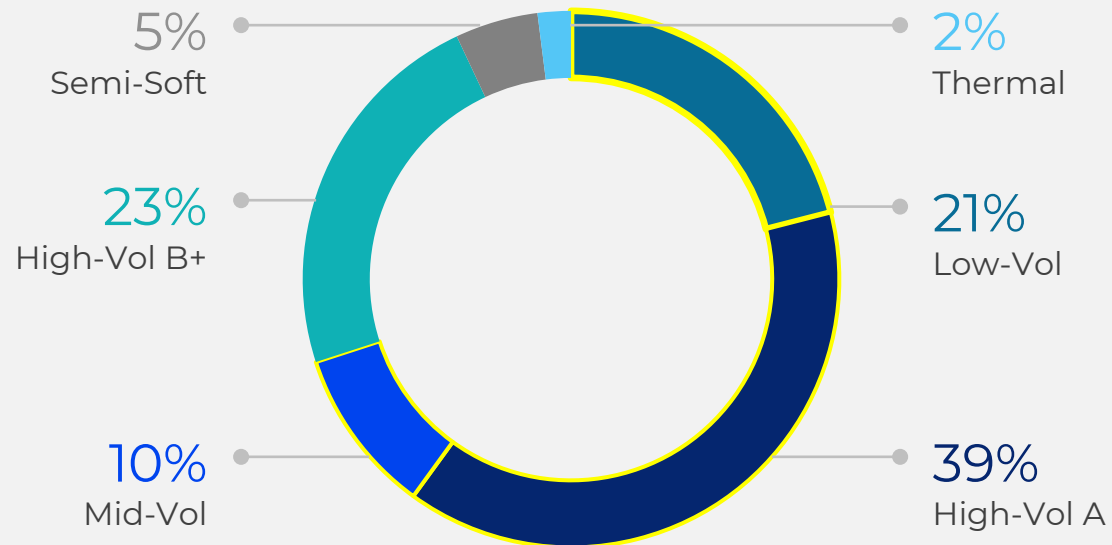
(\*) Based on the midpoint of guidance.

(\*\*) Anticipated rate of production during 2026.

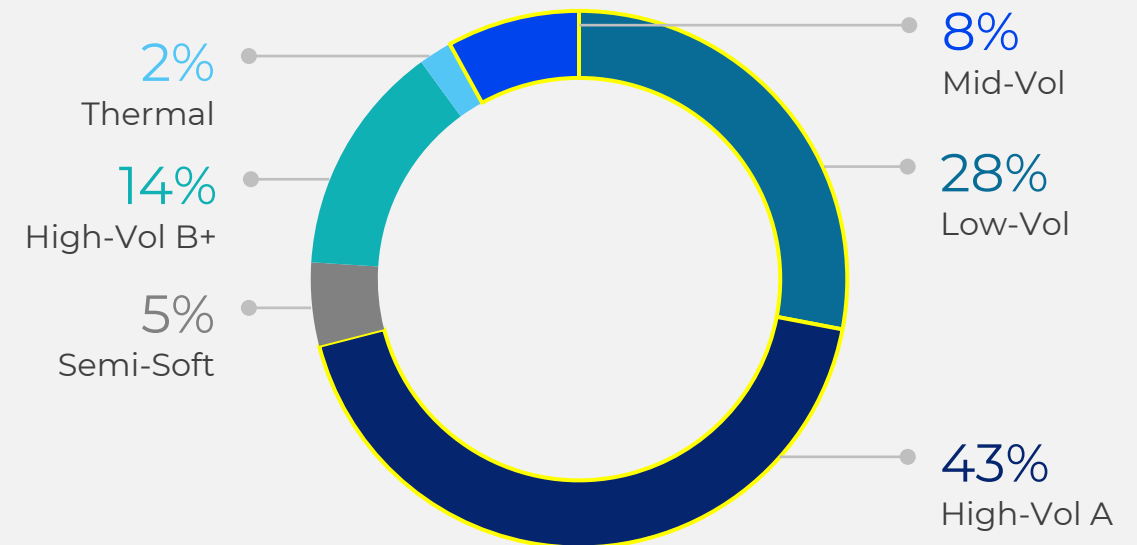
# METALLURGICAL QUALITY BREAKDOWN

Production growth is focused to create a long-term, high value portfolio. Almost 80% of production at our anticipated 6.5 million ton<sup>1</sup> level is expected to be higher quality Low Vol, Mid Vol, and High Vol A coal, with the flexibility to pivot production based on market conditions.

## 2023 Production Outlook<sup>(1)</sup>



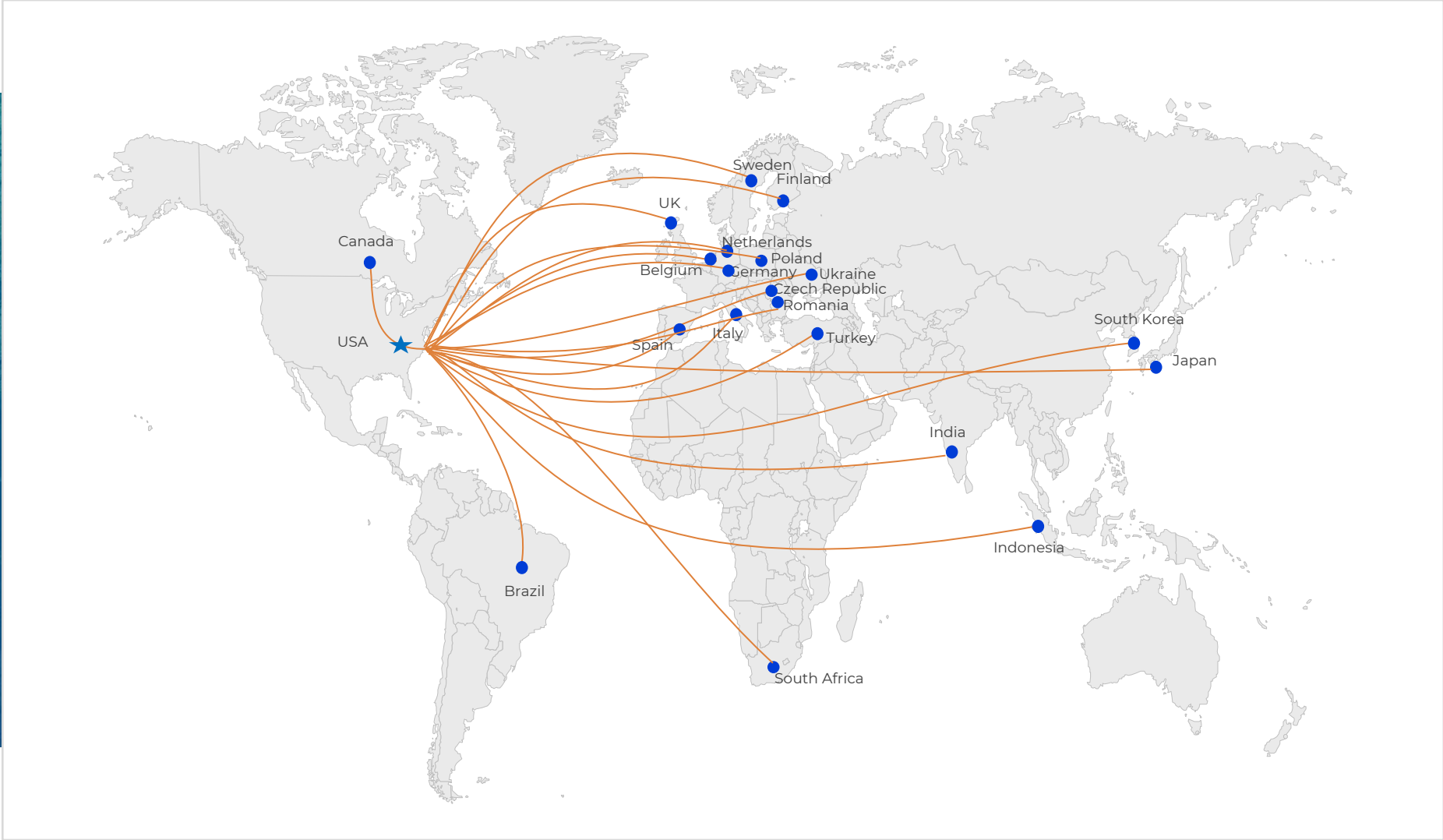
## Medium-Term Production Outlook<sup>(2)</sup>



(1) Anticipated production is based on internal forecasting. Actual production is subject to change. (2): Totals may not add due to rounding.

# GLOBAL COAL SALES

Ramaco coal has been sold in almost 20 countries, having recently increased its Asian footprint





# SECOND QUARTER HIGHLIGHTS

Continued Productions Growth; Mining Approved at Brook Mine; METCB Distribution



## Second Quarter Highlights and Commentary

- ④ **Approval to Begin Mining at Brook Mine** – Our Board approved ~\$2.5 million of spend towards additional mine development to commence in 4Q23 at our rare earth and coal Brook Mine in Sheridan, Wyoming. We also noted that our current Exploration Target is now up 50% from our initial Exploration Target to 0.9 – 1.2 mm tons from an original Target in May of 0.6 – 0.8 mm tons.
- ④ **Initial Class B Dividend Declared** – For 3Q23, the Board approved and declared a quarterly cash dividend of \$0.125 per share on the Class A stock, as well as our initial cash dividend on newly issued Class B shares of \$0.1654 per share, based on second quarter 2023 results.
- ④ **Pricing Update** – The Company has 3.1 million tons, or 95% of 2023 forecast production, now contracted. Of this amount, 2.2 million tons is fixed price business at an average of \$188 per ton, with the balance priced against a floating index.
- ④ **Transportation Issues** – Both 2Q23 net income and Adjusted EBITDA were negatively affected by \$9 mm (EPS of \$0.19) and by \$11 mm respectively, due to transportation issues with the NS and CSX rail companies. Roughly 85,000 tons that were contracted to ship during the quarter were pushed to July.
- ④ **Guidance Update** – 2023 production guidance is updated to 3.0 – 3.5 mm tons from 3.1 – 3.6 mm tons, driven by the idling of the Triple S mine due to market conditions. Given the limited mine life at Triple S, production beyond 2023 is unaffected by this. 2023 sales guidance is updated to 3.1 – 3.6 mm tons from 3.3 – 3.8 mm tons, still representing an almost 40% increase versus 2022 sales. 2023 cash costs now expected to be \$102 – \$108 per ton, up from \$97-103 per ton, due to the combination of continued inflationary cost pressures and higher than anticipated mine development costs during the ramp up phase at our Berwind complex. Lastly, we now anticipate lower 2023 Capital Expenditures of \$60 – \$70 mm vs. \$65 – \$80 mm previously.

# SECOND QUARTER OVERVIEW

Continued execution drove strong production; transportation issues and inflation pressured results



## Strong execution led to record coal production; however, transportation issues impacted tons sold

- Second quarter production was a record 876,000 tons and tons sold of 715,000 was up 23% YoY, on the back of the Company's continued strong growth pipeline.
- Second quarter net income of \$8 million and Adjusted EBITDA of \$30 million were down from first quarter of levels as a result of both transportation issues and inflationary cost pressures.
- Second quarter net income and Adjusted EBITDA were negatively affected by \$9 million and \$11 million respectively from transportation issues.

	2Q23	1Q23	Chg. vs 1Q	2Q22	Chg. YoY	2023 YTD	2022 YTD	Chg. YoY
<b>Total Tons Sold (000)</b>	715	757	(6%)	584	23%	1,472	1,167	26%
<b>Revenue (\$MM)</b>	\$137.5	\$166.4	(17%)	\$138.7	(1%)	\$303.8	\$293.5	4%
<b>Cost of Sales (\$MM)</b>	\$99.2	\$110.5	(10%)	\$76.6	29%	\$209.7	\$157.9	33%
<b>Non-GAAP Pricing of Company Produced Tons (\$/Ton)</b>	\$163	\$185	(12%)	\$215	(24%)	\$174	\$224	(22%)
<b>Non-GAAP Cash Cost of Sales - Company Produced (\$/Ton)<sup>1</sup></b>	\$109	\$105	4%	\$106	3%	\$107	\$104	3%
<b>Non-GAAP Cash Margins on Company Produced (\$/Ton)</b>	\$54	\$80	(33%)	\$109	(50%)	\$67	\$120	(44%)
<b>Net Income (\$MM)</b>	\$7.6	\$25.3	(70%)	\$33.3	(77%)	\$32.8	\$74.8	(56%)
<b>Diluted Earnings per Share<sup>2</sup></b>	\$0.17	\$0.57	(70%)	\$0.74	(77%)	\$0.73	\$1.66	(56%)
<b>Adjusted EBITDA (\$MM)</b>	<b>\$30.0</b>	<b>\$48.3</b>	<b>(38%)</b>	<b>\$57.9</b>	<b>(48%)</b>	<b>\$78.3</b>	<b>\$121.9</b>	<b>(36%)</b>
<b>Capital Expenditures (\$MM)</b>	\$24.5	\$23.5	4%	\$34.1	(28%)	\$48.0	\$53.8	(11%)
<b>Adjusted EBITDA less Capex (\$MM)</b>	<b>\$5.5</b>	<b>\$24.7</b>	<b>(78%)</b>	<b>\$23.8</b>	<b>(77%)</b>	<b>\$30.3</b>	<b>\$68.1</b>	<b>(56%)</b>

(1) Adjusted to include the royalty savings from the Ramaco Coal transaction 1Q22. Excludes Berwind idle costs in 1Q23 and 4Q22. Cash costs and margins are non-GAAP measures.

(2) Average of the single class of stock through 06/20/23 and Class A common and restricted shares outstanding for the period 06/21/23-06/30/23.



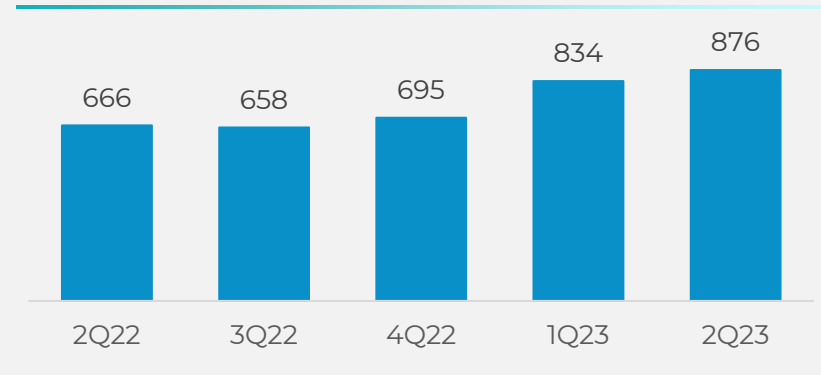
# SECOND QUARTER PERFORMANCE REVIEW

Strong growth profile coupled with solid balance sheet remains core to our principles

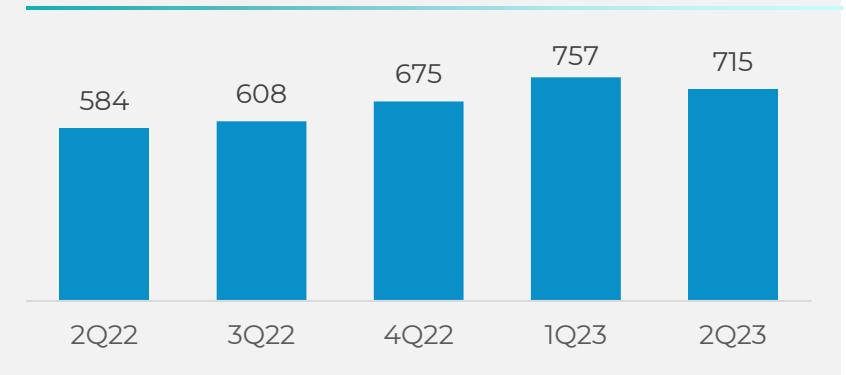


- Second quarter production was a record 876,000 tons, up 32% YoY, on the back of the Company's continued strong growth pipeline.
- Second quarter sales were 715,000 tons, up 23% YoY on the strong production growth. Tons sold declined from the first quarter due to 85,000 tons that were delayed due to transportation issues.
- Ramaco has one of the industry's most conservative balance sheets, with net debt to 12-month trailing Adjusted EBITDA of just 0.7x.
- Ramaco has the lowest AROs plus legacy liabilities among its direct peer group, 94% below the group average<sup>(2)</sup>.

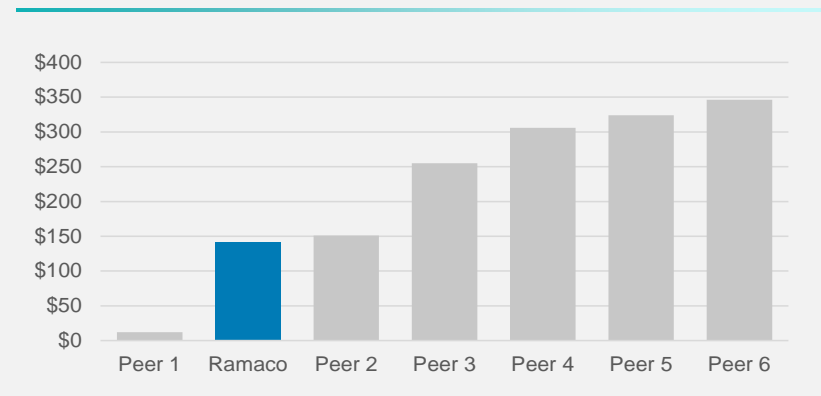
**Total coal production** (000s of tons)



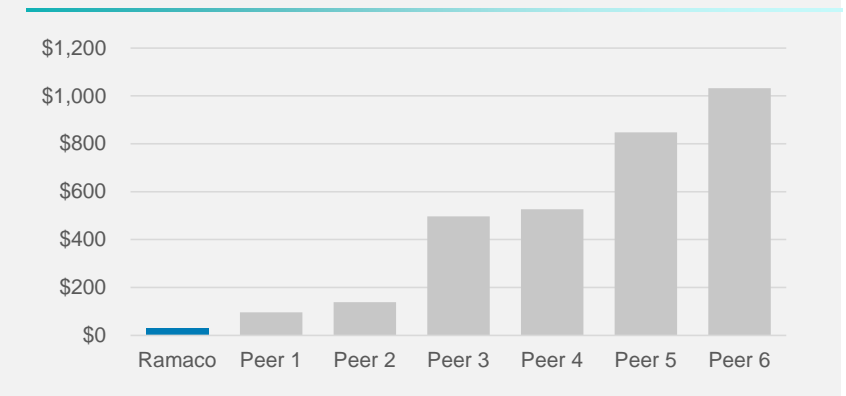
**Total coal sales** (000s of tons)



**Total Debt<sup>1</sup>** (in \$MM)



**Legacy Liabilities + AROs<sup>2</sup>** (in \$MM)



(1) Debt through 2Q23. Peers include (alphabetically): Alpha, Arch, Consol, Coronado, Peabody, Warrior. (Same peer group below.) (2) Legacy liabilities include workers' comp, black lung, pension & post-retirement benefits, and other, through 2022

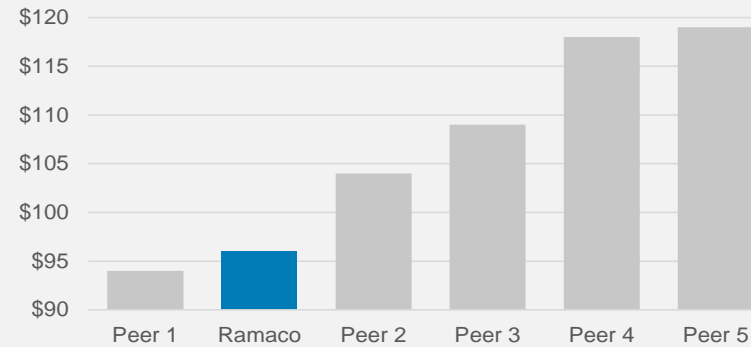
# LOW CASH MINE COSTS; STRONG MARGINS

Recent coal price weakness highlights the importance of our low-cost platform

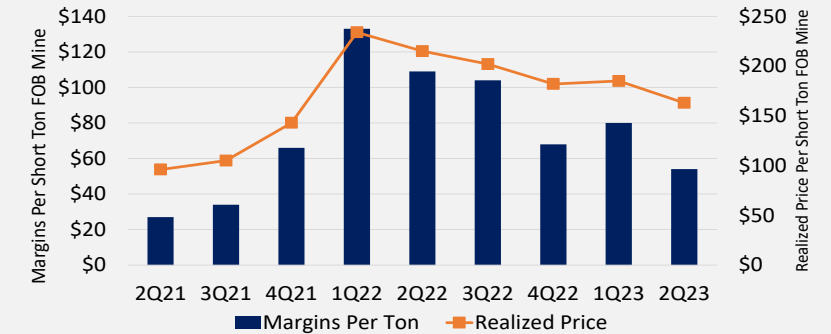


- Our mine costs are among the industry's lowest. Despite industry-wide inflationary pressures, we are committed to staying at the low end of the U.S. cost curve.
- For full-year 2022, our cash margins averaged more than \$100 per ton, compared to \$38 per ton for 2021, which was our previous record year. While down from the peak on lower index pricing, margins remain strong.
- U.S. met coal prices remain near the 5-year average, despite the recent pullback.
- U.S. steel prices, while also down from their recent peak on renewed global economic concerns, remain at highly profitable levels.

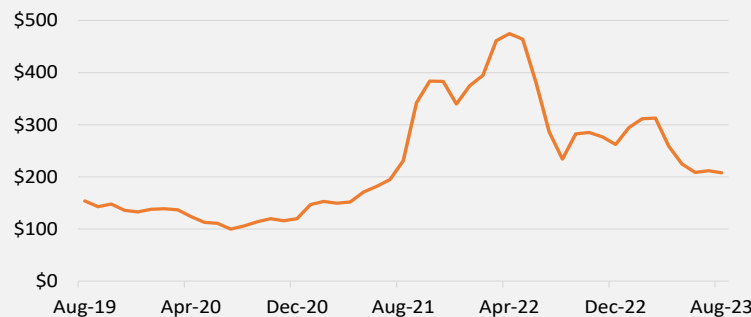
## 2022 Met Coal Cash Costs <sup>1</sup>



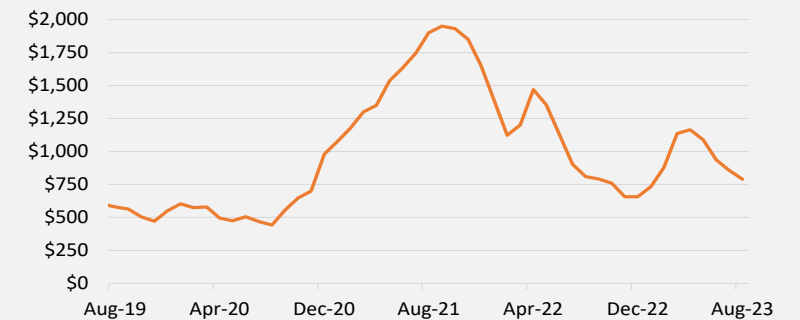
## Strong Quarterly Margins (\$MM)



## U.S. Met Coal Spot Price <sup>2</sup>



## U.S. Steel Spot Price <sup>3</sup>



(1) In \$/short ton FOB mine; Ramaco includes just Elk Creek Complex, as both Berwind and Knox Creek Complexes were ramping up production. Results are for full-year 2022. Peers include (alphabetically): Alpha, Arch, Coronado, Peabody, Warrior. (2) In \$/metric tonne FOB port for U.S. High Vol A (monthly average). (3) In \$/short ton (monthly average). Source: Company documents, Bloomberg



# KEY SECOND QUARTER VARIANCE TABLES

Lower index prices and transportation issues negatively impacted the quarter.



- Relative to our internal projections after 1Q23, actual 2Q23 Adjusted EBITDA<sup>1</sup> and Net Income came in \$29 mm and \$26 mm respectively less than we had anticipated due to the following:
- Lower Pricing:** US high-vol A/B indices averaged \$275/ton on March 31, 2023 vs. an average of \$223/ton in 2Q23. Relative to internal projections, this cost us \$16 mm of EBITDA and \$13 mm of Net Income.
- Lower Tons Sold Due To Transport Issues:** As previously mentioned, transportation delays cost us 85,000 tons of contracted volume, hurting EBITDA by \$11 mm and Net Income by \$9 mm.
- Higher Non-Elk Creek Costs:** Lower production and higher start up mining costs hurt EBITDA by \$1 mm and Net Income by \$1 mm.

<b>Key Variance Table: Actual Vs. Internal Expectations As Of End Of 1Q23</b>			
<i>(in millions, except earnings per share)</i>	<b>Adjusted EBITDA</b>	<b>Net Income</b>	<b>Diluted EPS</b>
Lower Realized Pricing Due To Fall In Indices	\$16	\$13	\$0.29
85,000 Tons Not Shipped Due To Rail Issues	\$11	\$9	\$0.19
Higher Start-Up Costs At Berwind/Knox Creek/Maben	\$1	\$1	\$0.02
Higher Book Tax Rate	\$0	\$3	\$0.06
<b>Total Impact From Above Challenges</b>	<b>\$29</b>	<b>\$26</b>	<b>\$0.57</b>
Actual	\$30	\$8	\$0.17
Expectations As Of End Of 1Q23	\$59	\$34	\$0.74
<i>Difference</i>	\$29	\$26	\$0.57

(1) See "Reconciliation of Non-GAAP Measures" in the Appendix.

# SECOND QUARTER PEER EARNINGS ANALYSIS

2Q23 was challenging for the industry on the back of lower pricing and general inflationary pressures



2Q23 results were challenging across the peer group driven by lower pricing and inflationary pressures that impacted costs.

2Q23 realized pricing for the group was down 20% from 1Q23.

Due to lower prices and inflationary headwinds, the peer group margin per ton was down almost 40% on average vs. 1Q23.

The peer group's 2Q23 reported EBITDA all came in well below consensus estimates.

	Ramaco (METC)			Warrior (HCC)			Arch (ARCH) <sup>1</sup>			Peabody (BTU) <sup>1</sup>			Alpha (AMR) <sup>1</sup>		
	Q2	Q1	Chg	Q2	Q1	Chg	Q2	Q1	Chg	Q2	Q1	Chg	Q2	Q1	Chg
<b>Tons Sold (MM)</b>	0.72	0.76	-6%	1.78	1.95	-9%	2.50	2.20	14%	2.00	1.30	54%	4.10	3.70	11%
<b>Price Per Ton</b>	\$163	\$185	-12%	\$209	\$257	-19%	\$144	\$204	-29%	\$190	\$221	-14%	\$173	\$209	-17%
<b>Cash Cost Per Ton</b>	\$109	\$105	4%	\$129	\$119	8%	\$90	\$83	8%	\$138	\$151	-9%	\$106	\$111	-4%
<b>Margins Per Ton</b>	\$54	\$80	-33%	\$80	\$138	-42%	\$54	\$121	-55%	\$52	\$70	-26%	\$67	\$98	-32%
<b>Adjusted EBITDA (\$ MM)</b>	\$30	\$48	-38%	\$130	\$259	-50%	\$130	\$277	-53%	\$358	\$391	-8%	\$259	\$354	-27%
<b>Consensus (\$ MM)</b>	\$44	\$39	NA	\$164	\$212	NA	\$160	\$264	NA	\$394	\$351	NA	\$320	\$306	NA
<b>Beat (Miss) (\$ MM)</b>	(\$14)	\$9	NA	(\$34)	\$47	NA	(\$30)	\$13	NA	(\$36)	\$40	NA	(\$61)	\$48	NA
<b>Capex (\$ MM)</b>	\$25	\$24	4%	\$136	\$68	100%	\$46	\$31	48%	\$67	\$56	20%	\$55	\$74	-26%

(1) Reflects metallurgical coal only





# RARE EARTH ELEMENTS (“REE”) POTENTIAL



# RAMACO'S REE DEPOSIT

Potentially transformative discovery



## REE Background:

- ① **What Are REEs?:** Rare earth elements (REEs) are critical minerals essential to the energy transition. They are used in many applications such as electric vehicles, wind turbines, smartphones, and defense applications. Almost 90% of the world's REEs are processed in China.
- ② **Magnetic Rare Earths:** Permanent magnets ("PMs") are crucial to the energy transition as they are critical inputs to electric vehicle motors and other high-end applications. The strongest PMs use magnetic rare earth materials, notably neodymium (Nd), praseodymium (Pr), dysprosium (Dy) and terbium (Tb). Dy and Tb are heavy REEs used in high end defense applications, and thus, are of strategic importance to the U.S. and other countries.
- ③ **Anticipated Demand Growth:** The International Energy Agency believes demand for REEs may grow as much as sevenfold by 2040.

## Ramaco's Involvement With NETL:

- ① **General Geopolitical Concerns:** The vast majority of the world's REEs are processed in China yet have strategic importance in both the energy transition and defense applications. As a result, REEs have received a tremendous amount of attention and economic support from many world governments concerned about reliance on China. The U.S., Congress and the Department of Energy have earmarked billions of dollars to develop a domestic supply of REEs. Since 2014, the National Energy Technology Laboratory ("NETL"), has been identifying potential domestic sources of REEs as strategically critical to the economy and national security.
- ② **NETL Notes Ramaco's Deposit is Highly Promising:** NETL has worked in collaboration with Ramaco over several years, to assess REE occurrences in coal deposits and related sedimentary strata at its Brook Mine property in Sheridan, WY. NETL analysis shows that core samples from the Brook Mine represent highly promising, world-class medium REE and heavy REE accumulations. Based on this data, the Brook Mine could rank among the more promising worldwide deposits.



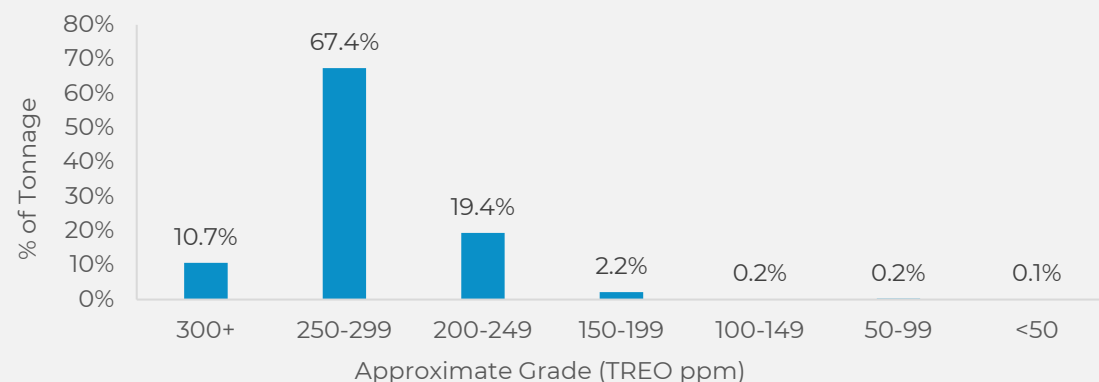


# KEY HIGHLIGHTS FROM WEIR INTERNATIONAL'S JULY 2023 UPDATE TO ITS MAY 2, 2023 TECHNICAL REPORT SUMMARY

## We believe Ramaco's Brook Mine has 3 distinct advantages:

- 1 The majority of its estimated REEs are found in clay, which are generally much less expensive and more easily processed than REEs found in hard rock.
- 2 The deposit has a meaningful percentage of both heavy magnetic REEs Dy and Tb, and light magnetic REEs Nd and Pr, which is important for strategic national defense applications.
- 3 The Brook Mine is already permitted and is anticipated to begin mining in 4Q23, with approved spend of roughly \$2.5 mm.

### Estimated TREO Grade Distribution



### Brook Mine Estimated TREO Concentration & Distribution (%)

TREO Concentration (ppm)	Estimated Distribution (%TREO)			Total
	Clay/Silt	Coal	Other	
<50	0.00	0.00	0.00	0.01
50-99	0.01	0.20	0.02	0.23
100-149	0.02	0.12	0.01	0.15
150-199	0.61	0.93	0.63	2.17
200-249	12.81	0.93	5.65	19.39
250-299	39.45	2.16	25.78	67.38
300+	6.22	0.90	3.55	10.68
<b>Total</b>	<b>59.12</b>	<b>5.25</b>	<b>35.62</b>	<b>100.00</b>

### Brook Mine In-Place REO Tons

Range	Total		Primary Magnetics		Secondary Magnetics	
	Tons ('000)	Grade (ppm)	Tons ('000)	Grade (ppm)	Tons ('000)	Grade (ppm)
Low	938	261	219	61	60	17
High	1,173	326	274	76	75	21

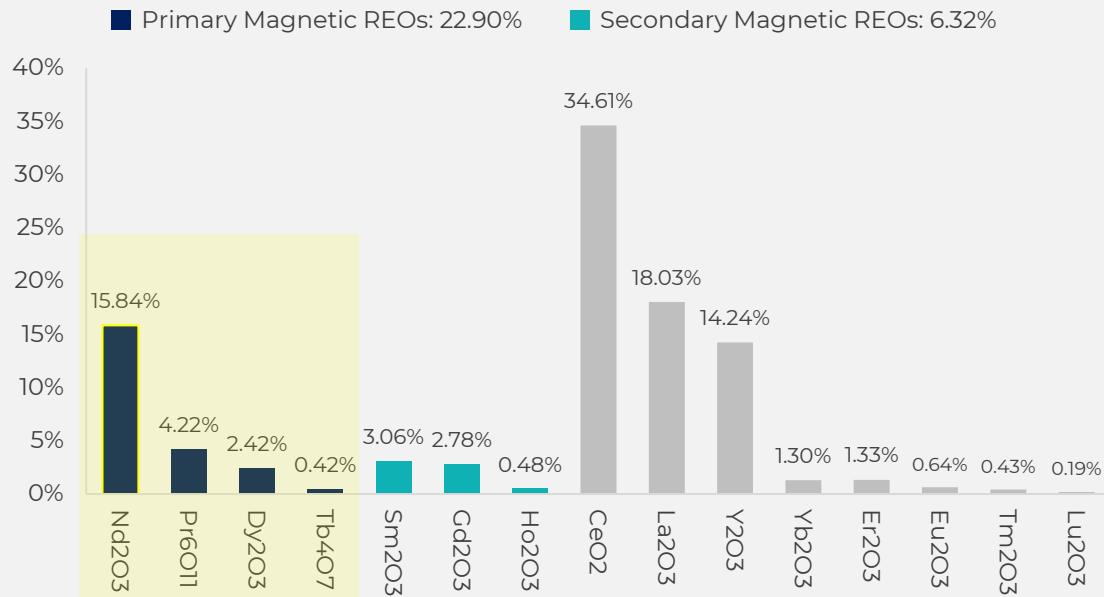
# KEY HIGHLIGHTS FROM WEIR INTERNATIONAL'S JULY 2023 UPDATE TO ITS MAY 2, 2023 EXPLORATION REPORT



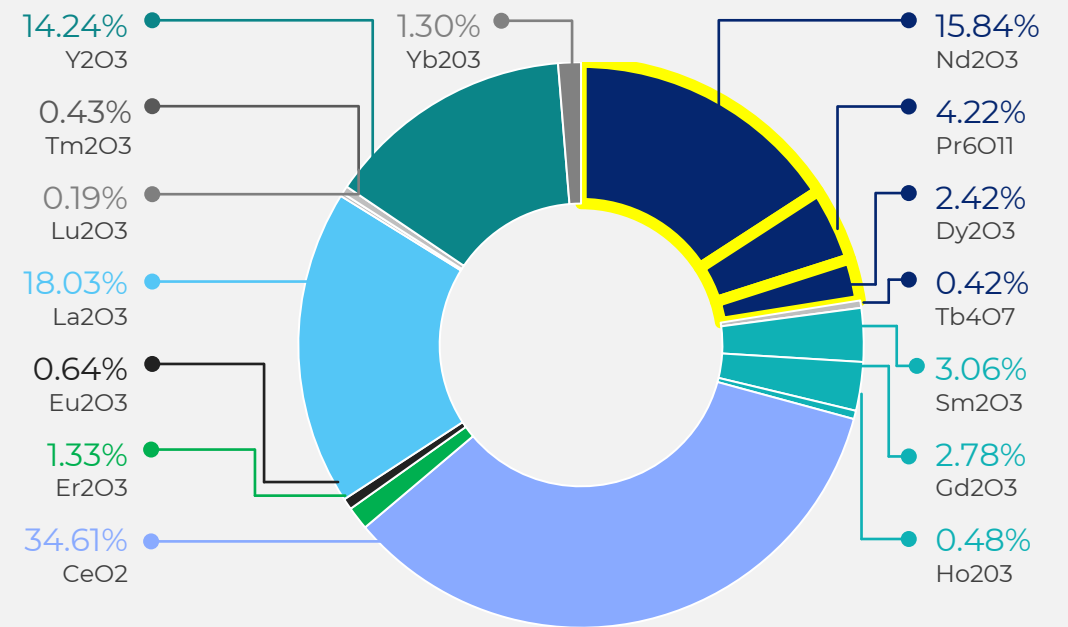
**23% of the total estimated REO basket consists of primary magnetic REOs of neodymium, praseodymium, dysprosium and terbium.**

An additional 6% of the estimated REO basket consists of secondary magnetic REOs of samarium, gadolinium and holmium.

**Estimated Brook Mine TREO Distribution by Oxide**



**Estimated Brook Mine TREO Distribution by Oxide**



Source: Weir International, Inc.



# 2023 RAMACO RESOURCES GUIDANCE



	Full-Year 2023 Guidance	Full-Year 2022
<b>Company Production (tons)</b>		
Elk Creek Mining Complex	2,200 - 2,400	2,033
Berwind & Knox Creek Mining Complex	800 - 1,100	651
<b>Total</b>	<b>3,000 - 3,500</b>	<b>2,684</b>
<u>Sales (tons)<sup>(a)</sup></u>	3,100 - 3,600	2,450
<b>Cash Costs Per Ton - Company Produced<sup>(b)</sup></b>		
	\$ 102 - 108	\$ 105
<b>Other</b>		
Capital Expenditures <sup>(c)</sup>	\$ 60,000 - 70,000	\$ 123,012
Selling, general and administrative expense <sup>(d)</sup>	\$ 34,000 - 37,000	\$ 31,810
Depreciation, depletion and amortization expense	\$ 48,000 - 52,000	\$ 41,194
Interest expense, net	\$ 9,000 - 10,000	\$ 6,829
Effective tax rate <sup>(e)</sup>	20 - 25%	22 %
Cash tax rate	0%	11 %
Berwind Idle Costs	\$ 3,000	\$ 9,474

Committed 2023 Sales Volume <sup>(f)</sup>	Volume	Avg Price
(In millions, except per ton amounts)		
North America, fixed priced	1.2	\$ 188
Seaborne, fixed priced	1.0	\$ 187
<b>Total, fixed price</b>	<b>2.2</b>	<b>\$ 188</b>
Indexed price	0.9	
<b>Total committed tons</b>	<b>3.1</b>	

(a) All 2023 guidance is as of Aug. 8, 2023, when the Company reported second quarter of 2023 earnings. Guidance includes a small amount of purchased coal; (b) Adjusted to include the royalty savings from the Ramaco Coal transaction for 2022. Excludes Berwind idle costs; (c) Excludes Ramaco Coal and Maben purchase price; (d) Excludes stock-based compensation; (e) Normalized, to exclude discrete items; (f) Amounts as of June 30, 2023, and includes a small amount of purchased coal. Totals may not add value to rounding.

# RECONCILIATION OF NON-GAAP MEASURES



Adjusted EBITDA and Net Debt are used as supplemental non-GAAP financial measures by management and external users of our financial statements, such as industry analysts, investors, lenders and rating agencies. We believe Adjusted EBITDA and Net Debt are useful because each allows us to more effectively evaluate our operating performance.

We define Adjusted EBITDA as net income plus net interest expense; equity-based compensation; depreciation, depletion, and amortization expenses; income taxes; certain non-operating expenses (charitable contributions), and accretion of asset retirement obligations. Its most comparable GAAP measure is net income. We define Net Debt as total debt less cash and cash equivalents. Its most comparable GAAP measure is total debt. Reconciliations of net income to Adjusted EBITDA and total debt to Net Debt are included below. Adjusted EBITDA and Net Debt are not intended to serve as substitutes for GAAP measures of performance and may not be comparable to similarly-titled measures presented by other companies.

<i>(In thousands)</i>	Q2 2023	Q1 2023	Q2 2022
<b>Reconciliation of Net Income to Adjusted EBITDA</b>			
<b>Net Income</b>	<b>\$ 7,556</b>	<b>\$ 25,257</b>	<b>\$ 33,280</b>
Depreciation, depletion and amortization	13,556	11,852	9,783
Interest expense, net	2,518	2,309	1,937
Income tax expense	2,467	5,548	9,818
<b>EBITDA</b>	<b>26,097</b>	<b>44,966</b>	<b>54,818</b>
Stock-based compensation	3,568	2,937	2,286
Accretion of asset retirement obligations	349	350	755
<b>Adjusted EBITDA</b>	<b>\$ 30,014</b>	<b>\$ 48,253</b>	<b>\$ 57,859</b>

<i>(In thousands)</i>	Q2 2023	Q1 2023	Q2 2022
<b>Reconciliation of Total Debt to Net Debt</b>			
<b>Total Debt</b>	<b>\$ 142,369</b>	<b>\$ 138,196</b>	<b>\$ 90,537</b>
Cash and cash equivalents	33,883	36,616	43,461
<b>Net Debt</b>	<b>\$ 108,486</b>	<b>\$ 101,580</b>	<b>\$ 47,076</b>





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