

Reading Anthracite Company: What To Do About Red Hot Anthracite Coal Demand?

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Reading Anthracite Company was a leading supplier of anthracite coal, a high-quality, scarce, carbon-rich product valued by steel manufacturers and other industries. In mid-2022—a time period of volatility and possibility as prices for anthracite coal skyrocketed after Russia invaded Ukraine and a host of Western countries imposed economic sanctions on Russia—Zack Scheler was hired as the company’s Vice President of Finance. Scheler and the executive team at Reading Anthracite knew that a profitable opportunity existed by selling coal on the spot market, but they also wanted to consider the impact on contracted customers and whether it was a good time to increase coal production. If the company was to increase production, how quickly and by how much should it scale up its supply chain? What risks were involved with doing so? This case includes a variety of strategic management, customer relationship management, supply chain management, risk management, and financial management concepts.

INTRODUCTION

Zack Scheler couldn’t believe the prices he was seeing for anthracite coal. Days after starting his dream role at the Reading Anthracite Company as the Vice President of Finance, Scheler was finally getting to dive deeply into the company’s finances. When he first interviewed for this position, he expected entering the coal industry would mean joining a relatively stable and established, albeit declining, industry. The prices he was seeing were anything but stable.

Just a year or so earlier—during the height of the COVID-19 pandemic—a ton of anthracite sold for an average of \$125. Now, in mid-2022 anthracite was fetching a previously unthinkable \$423 a ton or more on the spot market and very healthy \$200-\$250 a ton for contracted customers. Scheler reflected on the changes that caused coal to drop to \$125/ton in the first place. First, there was the increased political pressure to abandon domestic coal. Second, there was the flood of Russian anthracite coal rushing onto the international market. Third, there was the drastic

decline in industrial production and building construction during the pandemic. Combined, these issues

drove demand for U.S. coal to historic lows. Demand fell so low that prices barely covered costs. Scheler shared, “everyone was taking on debt. We were nervous about how much more the banks would lend, or how soon they would force us to start making repayments.” Then, the situation was reversed in a way no one anticipated. Russia invaded Ukraine and multiple Western countries imposed economic sanctions on Russia. Companies that relied on Russian anthracite scrambled desperately to find alternative sources of anthracite, a product that only represented about 1% of the world’s coal reserves, for which there were a limited number of companies operating a certain number of mines, and with supply chains that could not be scaled up quickly. Furthermore, some sources of supply had gone out of business during the period of low demand.

Scheler had to help shepherd Reading Anthracite through these turbulent, but potentially lucrative, times. As a private and old-school company that had started in 1871, Scheler informed Reading Anthracite’s mentality was, “Do what you need to do to make money. Don’t worry about the red tape. But, the million-dollar question is how do we address these demand changes? We only have so much coal to sell. Who should we sell it to?” Should Reading Anthracite chase after the high spot market prices? Should it stick with its existing customers at lower prices? Should it increase production capacity? What risks should Reading Anthracite take? Considering the complexity and unpredictability of the situation, Scheler knew the actions the leadership team pursued would be consequential, maybe even existential, for the 150-year-old company.

COMPANY HISTORY

Anthracite coal operations began in Northeastern Pennsylvania with a small number of independent mines in the early 1800s after discovery of anthracite, a hard and brittle coal that contained a high percentage of carbon to a low percentage of other volatile materials. Coal formed over millions of years as buried plant matter changed into ever denser carbon-rich material. Of the four types of coal, anthracite was the highest rank, meaning it was the rarest, the most carbon rich, the densest, possessed the highest heating value per ton, and contained the fewest impurities (U.S. Geological Survey, 2022).

Development of mines in the region was rapid and greatly expanded with the completion of the Schuylkill Canal, which allowed anthracite to move from Schuylkill County to Philadelphia in large barges. In the early 1840s the

Philadelphia & Reading Railroad (P&RR) began competing for coal business and within a few decades rail had overtaken canal for moving coal. Coal, particularly anthracite, was indispensable to meet the needs of the industrial revolution for a variety of applications, such as metals and chemical processing, steel refining, brick manufacturing, railroad steam engines, and smokeless home heating. By the 1870s, there were over 170 coal operations in the region (Reading Company Technical and Historical Society, 2022) and the P&RR transported much of those operators' coal—but the railroad figured controlling the vast coal deposits in Pennsylvania would allow it to capture even more coal transportation.

Thus, in 1871 the P&RR created the Philadelphia & Reading Coal & Iron Company (P&RC&I) to aggressively buy coal lands and operators, and to develop its own coal mining operations. The subsidiary operated mines and coal processing plants while the railroad shipped the finished product to market. The move to consolidate the industry allowed P&RC&I to dominate anthracite. At one point, it controlled about 40% of anthracite reserves in the United States (U.S.). The wealth generated from anthracite was vast and for a period of time the company held the title of the largest company in the world! The money flow encouraged rapid development of the city of Pottsville to over 22,000 people and even led to a team franchise in the National Football League (NFL), the Maroons. The company also dealt with some of the most infamous labor unions in history, such as the Molly Maguires.

Eventually controlling such a large share of the country's anthracite reserves and the means of transporting the product brought greater federal government scrutiny. The railroad and the coal company became entities of the Reading Company, a holding company created to satisfy antitrust laws, but in 1923, the Supreme Court ordered the separation of the two companies. With increasing competition from oil and natural gas for home heating in the 1920s, the anthracite industry declined. In 1937, the Coal and Iron Company filed for bankruptcy and proceeded to sell off a considerable amount of property and assets. In 1945, the Reading Iron Company was absorbed by merger prior to the near-complete collapse of the anthracite industry in the 1950s (SNAC, 2022). The company was sold in 1955, the remaining assets transferred to a new subsidiary called the Reading Anthracite Company, and then the company was sold again in 1961 to private owners. Reading Anthracite operated under this ownership arrangement for over 60 years—and the company continued as the largest anthracite mining company in the U.S. Its “Famous Reading Anthracite” brand was ubiquitous in the anthracite industry (see Figure 1).

FIGURE 1

Famous Reading Anthracite Logo.



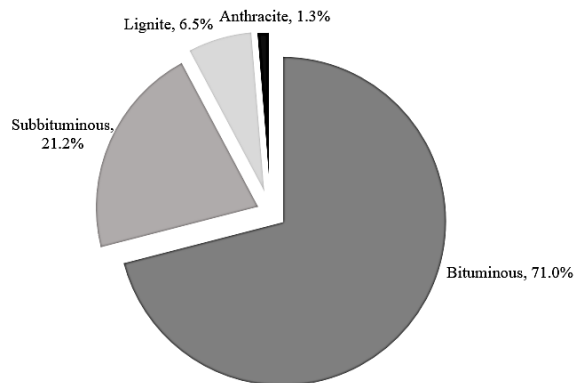
Source: Readinganthracite.com

COAL MINING INDUSTRY

The coal mining industry in the U.S. exhibited low concentration, high barriers to entry, modest profit margins of 2.8% of revenue, and a life cycle state designated as “declining” (O’Malley, 2022). The industry produced a variety of products. Figure 2 depicts the percent of industry revenue derived from each of the coal products. Production percentages were different than percentages of industry revenue. For example, anthracite represented only about .4% of all coal production in the U.S., but with its relative scarcity, anthracite commanded a premium that generated the higher percentage of revenue (O’Malley, 2022).

FIGURE 2

Percent of Industry Revenue by Coal Mining Product.

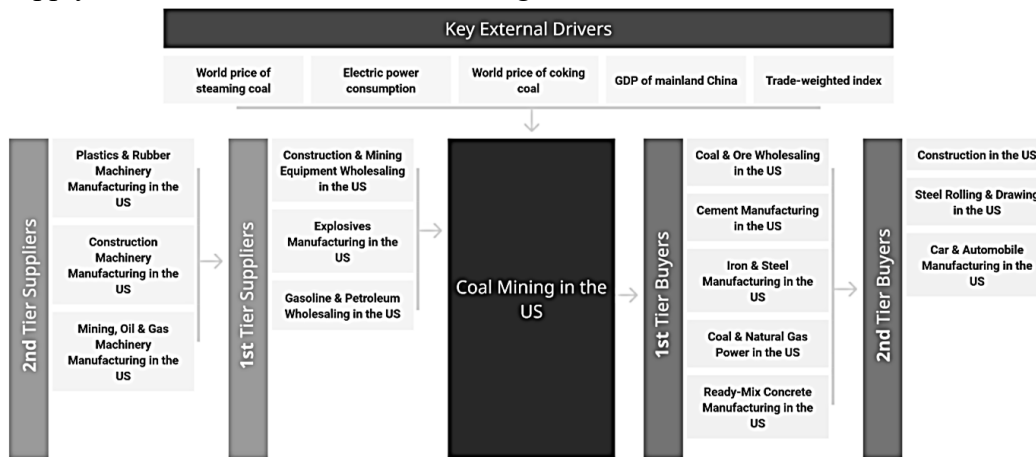


Source: O’Malley (2022)

Each of the coal products had different markets and dynamics (see Figure 3). Bituminous coal, also known as steaming or thermal coal, primarily went to coal-fired power plants to generate electricity. As such, it was subject to dynamics such as substitutes for power like natural gas and alternative technologies. In the 1980s, about 60% of utility electricity generation in the U.S. was coal fired; by 2022 coal accounted for only 19% of utility electricity generation (O’Malley, 2022). This type

of coal had been in decline for decades and had been a prime target for disuse by both environmentalists and politicians but was seeing a modest revival globally in 2022 due to geopolitical issues. For instance, an energy crisis in Europe caused countries to revert to coal for a portion of home heating and industrial production (Janicek, 2022). Due to the sheer volume of production, the greatest number of companies and the largest companies processed bituminous coal and the overall industry characteristics and metrics, such as profit margin, were heavily skewed by bituminous mining.

FIGURE 3
Supply Chain Schematic for Coal Mining in the U.S.

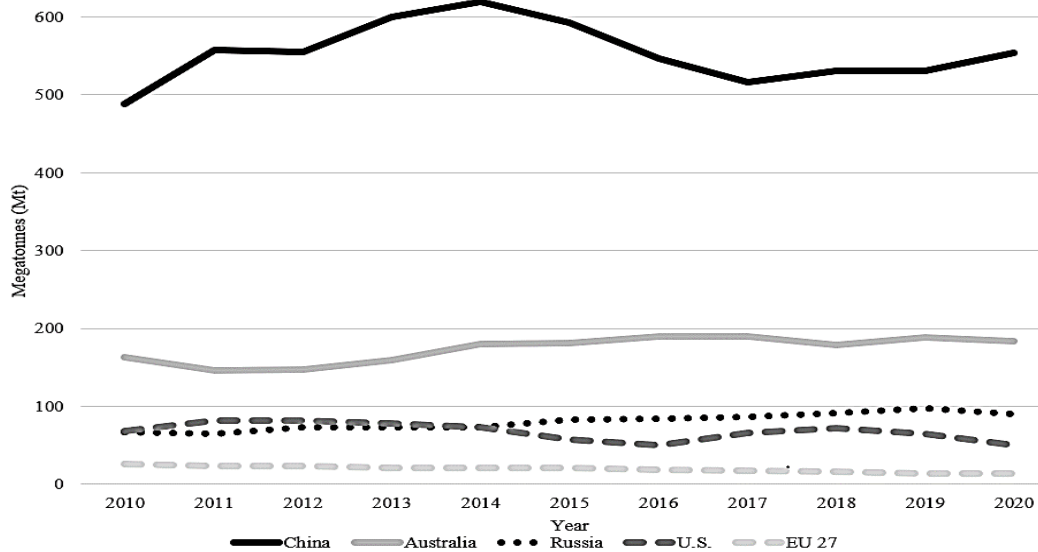


Source: O'Malley (2022)

Anthracite, on the other hand, derived most of its demand from steel manufacturing, and there were limited substitutes. Scheler commented, “Graphite is a substitute and so is coke, which is made by turning other types of coal into better coal by burning out the impurities. But for the most part anthracite is fairly insulated from substitutes. Its dynamics are driven more by demand changes in steel manufacturing or home heating based. If there is a warm winter, for example, the drop in anthracite can be significant.” Other countries produced more anthracite than the United States. China produced nearly 60% of anthracite in the world (see Figure 4), but it was mostly standard grade anthracite. The steel making industry demanded ultra-high grade, the type produced by Reading Anthracite, which would protect its market share for years to come (Fortune Business Insight, 2022).

FIGURE 4

Megatonnes (Mt) of Anthracite Produced by Country, 2010-2020.



Source: IEA (2021)

READING ANTHRACITE COMPANY BUSINESS MODEL

Reading Anthracite operated as a raw coal producer, meaning it owned mines and equipment and operated those mines using its own employees. The company had seven active mines and had significant coal reserves on other parcels that could be turned into new mine pits. Scheler shared, “Most of our current mines have been active since the 1800s. We’ve mined them differently over the years due to technology changes. Originally, we did deep mining in tunnels, and we would pull about 50% of the anthracite out. In the 1920s technology allowed for surface mining where excavators could dig into the ground about 50 feet or so. As the 1950s came along there was better equipment that allowed us to go down 200-300 feet. Now, we have drag lines, massive excavators, and huge trucks that can haul 100 tons of coal at a time. We can go down 600-700 feet in those pits.” The company was also a finished coal processor, meaning it cleaned, sized, and separated raw coal in a process called breaking to create the finished product for end users. Finally, Reading Anthracite bought raw coal from contract miners, third parties who used their own equipment and employees to mine Reading-owned reserves.

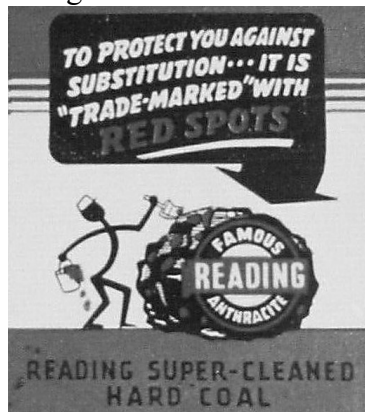
Reading Anthracite sold multi-grade anthracite products, and with its proximity to major East Coast transportation ports and hubs it was able to offer efficient delivery solutions. Scheler informed, “We sell mostly to the steel industry and that is a growing market. We also sell a lot of coal for sugar manufacturing using sugar

beets, a flat but steady market.” In addition to steel and sugar processing, Reading Anthracite supplied some coal for home and business heating, but Scheler shared that market was declining a bit each year. The company’s other markets included water and sewage treatment and bagged coal for restaurants that offered coal-fired pizza.

Over the years Reading Anthracite tried to differentiate its otherwise undifferentiated product. For example, for a period of time Reading spotted its coal with red dye as a marketing gimmick and emphasized its trademarked slogan, “When it’s red, it’s Reading” (see Figure 5). This ploy matched other companies such as the Glen Alden Coal Company with its branded Blue Coal, anthracite dyed with a blue color. Although that ploy fell by the wayside decades earlier, Scheler shared the company differentiated their coal in more meaningful ways: “We focus on building long-term relationships and trust that we will deliver to customers when they need it and to the quality specification we promised.”

FIGURE 5

Famous Reading Anthracite Logo.



Source: Old matchbook cover; owned by lead author

Scheler noted that “Reading Anthracite is really good at steel and has had those customers for years. Steel makers have an exact carbon specification recipe they are looking for and need reliable delivery of bulk industrial volumes via rail. We mix coal the right way for those customers and they are hesitant to switch because our competitors might not hit the specs, volume, or delivery. They would risk their operations just to save a few dollars on coal.” Competitors had capabilities in other markets. For example, one competitor excelled at home heating. Scheler said, “their entire operation is designed to get home heating coal out to customers. We do some home heating, about 10% of our business, but that isn’t our core so they do it

cheaper than us.” Other competitors sold coal to dealers, who in turn, sold coal to customers who didn’t need huge quantities. Scheler was emphatic, “We’d rather sell 50,000 tons to one customer than find 50 customers at 1,000 tons each. Those latter customers select on price; they aren’t customers who value long-term relationships, so we do very little in dealer sales.”

In terms of competition, there were four major anthracite coal companies in the United States in 2022. Scheler informed, “After those big four, of which Reading Anthracite is the largest, there is a second tier with companies about a fifth of the size of the big four. Then, there is a third tier of mom-and-pop types that do a little bit of coal each year.” Due to the types of markets Reading Anthracite pursued, the revenue model for it was different than its competitors. For instance, some competitors priced coal low to take market share or to generate cash flows. These companies were also likely to sell coal at spot market prices on an as-needed basis.

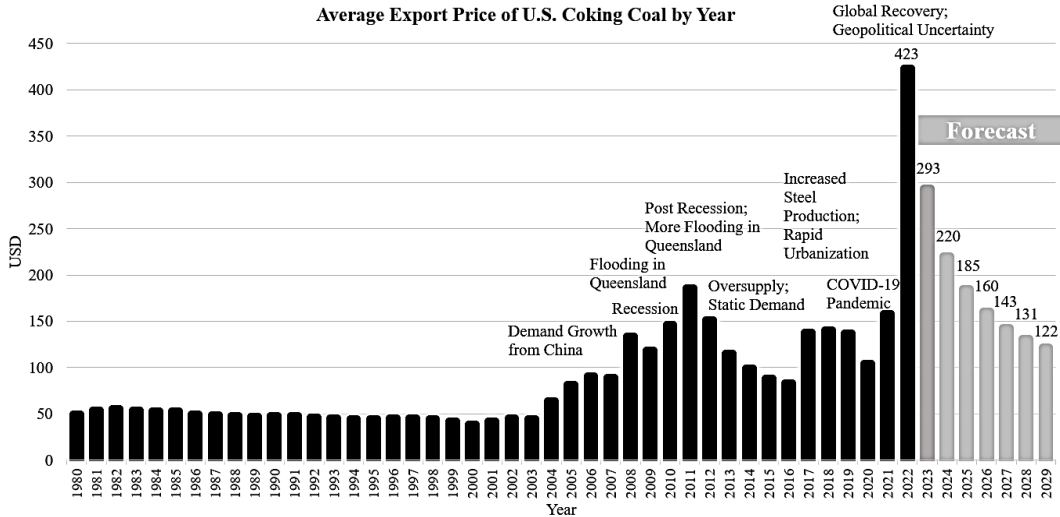
Reading Anthracite, on the other hand, emphasized contracts with select industrial users. Scheler mentioned, “Our biggest customers are on multi-year contracts, typically two years. We are locked in unless conditions change drastically and we reopen the contracts. We also do a lot of short-term contracts that are typically six months to a year. That lets us renegotiate those contracts more frequently based on market conditions. In the first half of 2022 we averaged \$140/ton for long-term contracts and \$165/ton for short-term contracts.” Reading Anthracite negotiated using guarantee levels. Higher prices would get 100% volume guarantees while lower prices would get 95% or 90% of contracted volume guarantees. Scheler shared, “This tactic helps us push prices up because our customers face problems if they don’t have coal. Our contract-driven model also allows us to estimate future cash flows accurately and when needed, to get access to bank financing. Our competitors with shorter contracts and spot selling get more money immediately on occasion, but they don’t have the same opportunity to borrow from a bank.”

INFLUENCES ON ANTHRACITE COAL DEMAND

There were no published prices on exchanges specific for anthracite coal since it represented such a small portion of all coal sales. Typically, the price of coking coal, anthracite’s closest substitute, was used as the market comparison for anthracite prices. As seen in Figure 6, the price of coking coal held steady near \$50 a ton from 1980 through 2001 before exhibiting considerable volatility. Various factors combined to cause this, but unlike bituminous coal, the price changes were not strongly correlated with other carbon products such as natural gas and oil, or energy sources such as solar, wind, and nuclear. Rather, supply shocks, demand shocks, or the combination of the two were the primary causes of price changes.

FIGURE 6

Annotated Price of Coking Coal in the World by Year. Average U.S. Export Price is used as proxy for World Price.



Source: IBISWorld Business environment report A5215 (2022).

Figure 6 shows the price of coking coal tripled between 2003-2008 due mainly to demand growth from China as it rapidly industrialized and needed tremendous quantities of steel. In 2008, mines in Queensland, Australia, a major center of mining for coal that can be turned into coke, were closed for months due to flooding, which restricted the supply of coal and drove prices higher. The same issue occurred again in 2011, which combined with the increased demand exiting a recession to cause prices to jump to almost \$200 a ton.

The global economy held steady during the period of 2012 through 2016 but supply increased due to the emersion of Russia as a major supplier of anthracite coal. Scheler explained, “Russia has sites in remote regions of Siberia that no private company would go so their government subsidized pretty much everything. They built the rail lines. They bought the equipment. They paid for the development of massive coal mines. The Russian mining companies’ costs are next to nothing. The Russians flooded the international market with considerably more anthracite than they used to at very cheap prices.” Russian coal found a receptive wholesale dealer market. Scheler mentioned, “The dealers could buy the Russian coal for about \$50/ton and then sell it domestically at a huge profit. That was much better for the dealers than buying coal domestically at \$120/ton.” By 2017, however, rapid global urbanization in countries such as Japan and China drove prices higher, but that

movement stalled when China eased its restrictive coal production measures (IBISWorld, 2022).

The COVID-19 Pandemic saw dramatic declines in industrial production. Scheler informed, “Fewer people bought automobiles so there was less need for steel. Even if people wanted to buy cars, the manufacturers couldn’t finish them because of the global semiconductor chip shortage. Building partially finished cars while waiting for chips is not a viable plan. So, production slowed. There was also less steel for buildings because big steel buildings and skyscrapers weren’t being built.” With these demand declines, demand for coal at steel processors bottomed out. The U.S. as a whole produced only 2 million tons of anthracite in 2020, the lowest in about two hundred years. Scheler recalled, “Prices were so low that companies couldn’t cover their costs. No one was making money.”

The situation reversed suddenly when Russia invaded Ukraine on February 24, 2022 in an escalation of a decades-long dispute about territories, culture, and political systems. The invasion drew condemnation from a variety of countries who were determined to aid the Ukraine cause. In a series of coordinated economic sanctions, the United States and a host of allied countries attempted to weaken Russia’s military, isolate it from the rest of the world, harm its economy, and cause public disaffection in Russia (Siripurapu, 2022). Sanctions included restricting exports that Russia relied on to fund its economic system. Scheler expressed what this meant for anthracite, “Most of the Asian countries did not sanction Russia, so Russian anthracite was still purchased by countries friendly to Russia. And, overall there was still the same relative amount of anthracite being produced, but suddenly and without warning there has been massive upswing in the demand for non-Russian anthracite by companies in countries that imposed sanctions. It has been a huge scramble and there is only so much non-Russian anthracite on the international market to go around.”

Forecasters believed coking coal prices had likely peaked at \$423/ton in mid-2022 and would fall through 2029 (see Figure 6 forecast; IBISWorld, 2022). But, as history demonstrated, there were multiple issues that could change the expected trajectory of coking coal prices. Plus, even with falling prices, the price outlook for the next five years was considerably stronger than most of the previous 40 years.

OPTIONS TO MEET SURGING DEMAND

Scheler informed the demand for non-Russian anthracite was in excess of what domestic companies could meet. He shared, “We only have so much coal to sell. Reading Anthracite mines about the equivalent of 600,000 finished tons a year. The big question is who do we sell that output to? And, how much money should we

invest in equipment and people to expand capacity, if at all?" In an ideal world, Reading Anthracite would ramp up production capacity to meet the surge in demand, but Scheler reminded that coal mines did not have a switch to turn on and start making more coal in quantities synchronized to demand. Rather, he emphasized, "There's many steps to send more coal out to customers. First, you need land that has coal on it and you need to get a permit to mine that land. Permits can take up to a year for a new mining location." Reading Anthracite already had seven active mines and it did not anticipate opening any new mines at the moment so permitting was not an issue.

Increasing output at existing mines required a considerable amount of specialized equipment tailored to particular mining techniques, necessitating a substantial capital commitment during a time of rising interest rates (O'Malley, 2022). Scheler was concerned about the prospects for new equipment: "Everyone is trying to buy equipment to meet this new demand. The big equipment makers were not prepared for that surge so prices and lead times have increased substantially. The price for a mining truck was about \$1 million a bit ago. Now, they're selling for \$1.7 million with deliveries at least six months from now!" Even if the company could obtain equipment, getting people to operate the equipment would be difficult. Scheler opined, "Wages are very high right now, but we still can't find enough people with the particular skill set who want to work in the mines."

The challenges of flexing up the supply chain for anthracite did not stop there. After being mined, the coal was transported by truck to a breaker to clean and sort the coal. Scheler reminded, "Breakers can only run so fast. We're not going to build another breaker any time soon so we would need to get people to work overtime and weekends. That's been harder to do and it increases costs as we have to pay premium prices for overtime labor." Then the finished coal was transported to destination so factors such as availability of additional coal hopper rail cars came into play. And finally, all of those changes needed to be coordinated and they all required cash. Scheler was optimistic about Reading Anthracite's prospects for financing: "With our long-term contracts we are well-positioned to get financing for equipment if we choose to go that route."

Scheler outlined the options Reading Anthracite could pursue. Each option had its own costs, opportunities, and risks that needed to be evaluated. Scheler's financial analysis used a basic net income approach starting in 2022 and projecting out to 2027, using the template displayed in Table 1. Cost and capital changes would both be captured in the Cost of Coal Production and Sales, which stood about \$125 a ton. This cost would start to escalate 1% annually in 2025 due to expected regulations, labor cost increases, and other cost pressures.

Table 1
Financial Projection Template

Option:	2022	2023	2024	2025	2026	2027
Revenue from Spot Market						
Revenue from Short Term Contracts						
Revenue from Long Term Contracts						
Total Revenue						
Cost of Coal Production and Sales						
EBIT						
Income Tax Expense (15%)						
Net Income						

Option A: Renegotiate long-term contract customers (about 20% of total coal output) and short-term contract customers (about 80% of total coal output); avoid chasing the spot market.

Due to reopening clauses, Reading Anthracite could renegotiate two-year contracts that expired by the end of 2022 immediately. This would affect revenues during the second half of 2022. With the short-term contracts expiring every six months to one year they could also be renegotiated. These, too, would affect the second half of 2022. Scheler estimated the long-term contracts could fetch \$200 a ton in the second half of 2022 and hold at \$200 for 2023-2024 contracts before being renegotiated for 2025-2026 and 2027 and beyond using a percentage of spot rates. The short-term contracts could broach \$250 a ton for the second half 2022 and 2023. The rates for future short-term contracts starting in 2024 would be tied to the forecasted spot prices shown in Figure 6. Long-term contracts typically were about 92% of spot rates (an 8% discount for locking in a price for two years) and short-term contracts were roughly 95% of spot rate (a 5% discount for locking in a price for up to a year).

Option B: Renegotiate contracts with core customers as in Option A; identify about 10% of short-term contract sales to allow to expire. Sell 10% of coal at spot market rates.

Contracts would be renegotiated as in Option A, but the output sales mix would be 10% spot, 70% short-term, and 20% long-term beginning in the second half of 2022. The spot rates were expected to be similar to those forecasted in Figure 6.

Option C: Renegotiate contracts as in Option A; make selective capital investments to increase coal production at existing mines either 5%, 10%, or 15%. Sell the additional coal output at spot market rates.

Contracts would be renegotiated as in Option A beginning in the second half of 2022. The extra output from capacity increases would not arrive until 2023. Scheler visualized the capacity increases: “In a well-oiled system, an excavator would be constantly scooping coal out of the ground and dumping it into a truck to transfer to the breaker. Right now, our excavators and drag lines are idle about 50% of the time waiting for a truck to arrive so we have excess excavator and drag capacity. We need to add more trucks and drivers to increase capacity—from a timing standpoint those will likely take at least 6 months to secure. We should have enough rail capacity to move the extra finished coal, but we’d have to run the breaker more using overtime and extra shifts.” Scheler estimated the Cost of Coal Production and Sales would increase \$2.50/ton for a 5% increase, \$5/ton for a 10% increase, and \$10/ton for a 15% increase.

Scheler found the summary of the three options displayed in Table 2 useful for developing the financial projections.

Table 2
Summary of Inputs for Financial Model Development

<i>Option A: Renegotiate Contracts; Avoid Spot</i>	First Half	Second Half	2023	2024	2025	2026	2027
	2022*						
Short-Term Annual Contracts	\$165/ton; 80% of output	\$250/ton; 80% of output	\$250/ton; 80% of output	95% of spot; 80% of output	95% of spot; 80% of output	95% of spot; 80% of output	95% of spot; 80% of output
Long-Term Two Year Contracts	\$140/ton; 20% of output	\$200/ton; 20% of output	\$200/ton; 20% of output	\$200/ton; 20% of output	92% of 2025 spot; 20% of output	92% of 2025 spot; 20% of output	92% of 2027 spot; 20% of output
Total Cost of Coal Production & Sales	\$125/ton	\$125/ton	\$125/ton	\$125/ton	1% increase over 2024	1% increase over 2025	1% increase over 2026

*Assume Coal Production/Sales is evenly split between halves

<i>Option B: Renegotiate Contracts; 10% Spot Sales</i>	First Half	Second Half	2023	2024	2025	2026	2027
	2022*						
Spot Sales		\$423/ton; 10% of output	10% of output	10% of output	10% of output	10% of output	10% of output
Short-Term Annual Contracts	\$165/ton; 80% of output	\$250/ton; 70% of output	\$250/ton; 70% of output	95% of spot; 70% of output	95% of spot; 70% of output	95% of spot; 70% of output	95% of spot; 70% of output
Long-Term Two Year Contracts	\$140/ton; 20% of output	\$200/ton; 20% of output	\$200/ton; 20% of output	\$200/ton; 20% of output	92% of 2025 spot; 20% of output	92% of 2025 spot; 20% of output	92% of 2027 spot; 20% of output
Total Cost of Coal Production & Sales	\$125/ton	\$125/ton	\$125/ton	\$125/ton	1% increase over 2024	1% increase over 2025	1% increase over 2026

*Assume Coal Production/Sales is evenly split between halves

Option C: Renegotiate Contracts; Increase Capacity; Sell Excess on Spot Market	First Half		Second Half		2023	2024	2025	2026	2027
	2022*								
Spot Sales			Additional 5%, 10% or 15% output	Additional 5%, 10% or 15% output	Additional 5%, 10% or 15% output	Additional 5%, 10% or 15% output	Additional 5%, 10% or 15% output	Additional 5%, 10% or 15% output	Additional 5%, 10% or 15% output
Short-Term Annual Contracts	\$165/ton; 80% of output	\$250/ton; 80% of output	\$250/ton; 80% of existing output	95% of spot; 80% of existing output	95% of spot; 80% of existing output	95% of spot; 80% of existing output	95% of spot; 80% of existing output	95% of spot; 80% of existing output	95% of spot; 80% of existing output
Long-Term Two Year Contracts	\$140/ton; 20% of output	\$200/ton; 20% of output	\$200/ton; 20% of existing output	\$200/ton; 20% of existing output	92% of 2025 spot; 20% of existing output	92% of 2025 spot; 20% of existing output	92% of 2027 spot; 20% of existing output	92% of 2027 spot; 20% of existing output	92% of 2027 spot; 20% of existing output
Total Cost of Coal Production & Sales	\$125/ton	\$125/ton	\$125/ton + costs of new capacity	\$125/ton + costs of new capacity	1% increase over 2024	1% increase over 2025	1% increase over 2026	1% increase over 2026	1% increase over 2026

*Assume Coal Production/Sales is evenly split between halves

CONCLUSION

Scheler was ready to pitch his recommendations to the executive team. The financial analysis was relatively straight forward. The more difficult discussion would be on the qualitative factors. For example, Scheler knew Reading Anthracite could lose loyal customers if they chased the spot market. “If we take the \$423 spot prices now, we’ll likely lose some of those \$250 short-term contract customers. What happens when spot prices come back down? Will our customers take us back? But how do we ignore \$423 a ton?” Scheler was also concerned about risks: “If we make an investment to increase capacity, what happens when things turn back around? This situation is tied to elevated prices that may last only as long as the Russia Ukraine war lasts. As quickly as the prices increased, they might fall again and we could be stuck trying to pay off new equipment when incoming cash starts slowing down.” Scheler believed he was ready to defend his recommendations as he entered the executive team meeting.

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