





2017 William T. Hogan, S.J. Lecture David Stickler, Big River Steel

“Big River Steel: A Technology Company That Just Happens to Make Steel”

Big River Steel is a global company with investors, lenders and technology providers from Austria, Brazil, Canada, China, Finland, France, Germany, Italy, Japan, Korea, Mexico, Russia, Spain, Switzerland and the United States

At Big River Steel, we view ourselves as the newest and most technologically advanced scrap recycling and steel production facility in the world. We began construction on our facility in July of 2014. Our first lines were completed in 19 months. I tell people: I had a neighbor down the street from me; it took him longer to build an addition on his garage, and we built an entire mill. We've invested US\$1.3 billion, and that's the largest industrial project in the state of Arkansas' history.

People ask me, “Dave, who is Big River Steel?” Big River Steel is a global company. We have investors, lenders and technology providers from throughout the world. People also ask me, “Dave, how did Big



Wendell Carter (left) presented David Stickler (right) with the 2017 AIST William T. Hogan, S.J. Lecture Award.

HOW WE CAME TOGETHER

Ownership includes a blend of industrial and financial investors with the shared objective of building and rapidly growing a technologically advanced steel company



**INTERNATIONAL
STEEL ASSOCIATES**



River Steel get started?" Big River Steel got started when a group of like-minded strategic and financial investors came together. For our company: 40% is owned by Koch Industries, a privately held company with US\$100 billion in annual revenue; TPG Capital, one of the 10 largest private equity firms in the world; ATRS, a large pension fund; and then my firm, Global Principal Partners; and the John Correnti estate,

International Steel Associates. Our goal is to build a technologically advanced, growth-oriented company.

What have we accomplished so far? We're proud to say that we're the first steel production facility in the world to be LEED certified. LEED certification is an independent recognition by an entity that determines leadership in energy and environmental design.

We also are the first steel mill to become a member of the Center for Collision and Safety Analysis. We're actually sitting at the design table with the world's leading automotive companies.

We're already producing API-grade material. Originally we didn't think we'd be producing those materials until later this year.

We also have had a very, very successful start-up. We started up our meltshop in December 2016. In our first full month of operation in January, we set a world record as far as number of tons produced: 63,000 tons. We were profitable in our second month of operation.

One of the achievements that I'm most proud of is our outstanding safety record. We build these facilities ourselves. We don't have a turnkey contractor. We don't hand over the keys to the construction effort to a third party. We do it ourselves. But if you look at the industry average and the statistics that the United States government takes, given a certain number of man-hours, the incident rate is 2.8. During our 24-month construction period, we had an incident rate of 0.11. We stress safety every day at Big River Steel.

Our company has been classified as a Flex Mill™. That definition is that we can stretch across various product offerings. The steels that we are most interested in making are the electrical steels. As we position this company for growth, our ultimate goal is to get into the grain-oriented, Hi-B steels. In addition, we'll have the full complement of non-grain-oriented steels as well.

Like many of the steel producers in this room, we're spending a significant amount of time, effort and money on advancing the use of high-strength steels. Not just the current generation of those steels, but the next generation as well.

"What's been the community impact, Dave?" People say, "Dave, you're located in Arkansas. Why'd you locate in Arkansas?" Well, we were going to put this mill in Vicksburg, Miss., USA, but we were able to negotiate a very, very favorable power rate with the local power company in Osceola. But the communities, and the impact that we make, if you look at these statistics, there's been US\$300 million of jobs alongside of our US\$1.3 billion. Those are 300 support jobs. Our jobs, the 435 jobs that we've committed to create, will pay US\$75,000 a year on average. That's our guarantee to the state of Arkansas. Quite frankly, I wouldn't be surprised if a year from now our workers are making close to US\$90–95,000. That's based on previous transactions I've been involved with.

We created over 2,000 construction jobs, and we spent over US\$300 million in the state of Arkansas with local construction and supply companies. We also have committed money to the local community college to invest over US\$10 million in training our workforce.

NICHE PRODUCTS FLEX MILL™

ENERGY PRODUCTS

- Leverage Flex Mill™ capabilities to serve industries that generate and move electrical energy
- Transformers steels that improve the efficiency of the transmission grid

ADVANCED HIGH STRENGTH STEEL (AHSS)

- Capitalize on the growing use of light-weight high-strength steels
- Capability to produce the "next generation" of AHSS—tremendous interest from the automotive community

DECEMBER 2015 RECORD HIGH WATER



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MAJOR TECHNOLOGY SUPPLIERS



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Big River Steel. They supplied the vast majority of the equipment, starting with the electric arc furnace, going through the ladle met, caster, tunnel furnace, downcoilers and a full complement of finishing facilities.

We embrace technology. We view ourselves as a technology company that just happens to make steel. We have automation throughout the mill. That allows us to keep our headcount low. With 435 employees, they're going to produce 1.6 million tons of steel a year. That's close to 4,000 tons of steel per employee. When we double and take our production capacity up to close to 3.4 million tons, we'll add another 200 workers. So we'll be producing, with 635 workers, close to 3.4 million tons of steel. I think that's world-class.

We also have embraced artificial intelligence. We deem ourselves the world's first learning mill. Technology has advanced significantly since the last transaction that I was involved with, and that was the financing and start-up of SeverCorr. We have a system of sensors and measurement tools that go well beyond just predictive

Here's some interesting statistics on construction. The concrete that we poured was enough to lay a sidewalk from Memphis to New York City. Fourteen hundred miles of cable was installed, enough to get from Memphis to Las Vegas. We have 14 miles of railroad track on-site. The good news is we're on the Mississippi River, from an operational perspective. The bad news is we're on the Mississippi River, from a construction perspective. We had to lower the water table 56 feet at times. We had close to 6 million man-hours during the construction period.

This is a picture of the high water in December of 2015 (see page 59). I wasn't sure whether we were still going to be able to unload our barges that day, but clearly we just made it. But it was nerve-racking, to say the least.

We're at a technology conference: here are some of our major technology suppliers (see page 59). This is a who's who. SMS group is the largest supplier to

maintenance. We look for correlations in all aspects of our operation, whether that be our scrap mix, whether that be breakout detection or the warning signs for cobbles. We believe that the use of artificial intelligence will allow us to be that much more competitive and ultimately that much more profitable.

We operate in the cloud. We're a cloud-based company. We don't have the big systems or the big IT departments. That saved us tens and tens of millions of dollars. We also believe that it gives us enhanced cybersecurity by operating in the cloud.

We're the only EAF flat-rolled steel producer in North America with an RH degasser. That will allow us to take our product capabilities up a notch from what previous EAF mini-mills have been able to achieve. We have our nitrogen levels down into the mid-20s. We can produce 1-inch-thick coils. We also have a skinpass mill, which is important for the electrical steels, with 10% elongation.

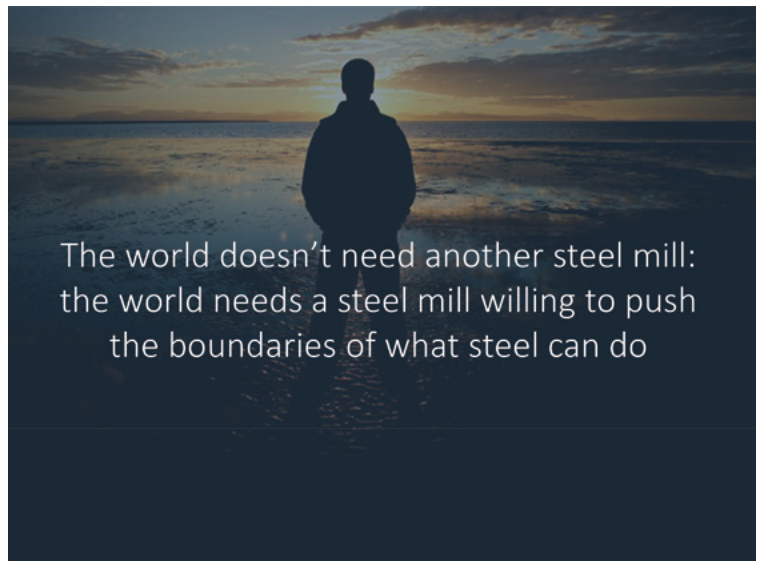
As I said before, at our core we're a technology company that just happens to make steel. We've been able to recruit and attract talent where the individuals might not otherwise have viewed steel as a career choice. It's something that we're very, very proud of. We've reached out to some of the colleges and universities on the East Coast as well as the West Coast to attract those technology students.

Our whole fundamental thesis is that we want to embrace technology throughout. We want to be good stewards of the environment. We want to create good career opportunities for our workers and be good stewards of the community dollars that people have invested with us.

We've focused on environmental compliance. Our mill was not only required to meet U.S. EPA standards, but because our bank debt comes from Europe, we were forced to meet the European environmental standards as well. Not in all cases, but in a significant majority of cases, the European environmental standards are more rigorous than the U.S. We were also the first meltshop designed and built under the Obama air and water quality standards, which quite frankly posed some challenges to us with some of the PM_{2.5} background material.

Our goal is to become the most energy-efficient steel producer. With the LEED certifications, there's an independent body that has taken the time and effort, and ran the measurements, and they clearly think that we are. We've made investments throughout the mill to reduce our energy consumption, whether that be electricity or gas, all throughout the mill. We do have access to the real-time power market, which is somewhat unique. When power is in great demand, and prices are spiking, we can choose to turn our furnace operations down and actually contribute to the grid, possibly keeping a coal-fired peaking plant from having to start up. It's something that we've already used so early in our life here.

The world doesn't need a steel mill; the world needs a steel mill that's going to push the boundaries of what steel can do. Again, many, many steel production operations, everyone is trying to automate, everyone is looking for the energy efficiencies. The nice thing about Big River is we had a clean piece of paper to do it. We were able to take the best technology from day one and install that technology. Hats off to all



of our competitors that have older mills that are also embracing the use of automation and technology. I heard that from some of the speakers up here this morning.

Thank you very much for the time this morning, and thank you again for the Father Hogan Award. Thank you very much. ♦

