

INVESTORS AND ANALYSTS FIELD TRIP TEXAS 2018



STRATEGIC BACKGROUND

WOLFGANG EDER, CEO voestalpine AG

THE voestalpine Group



Headquartered in Linz, Austria

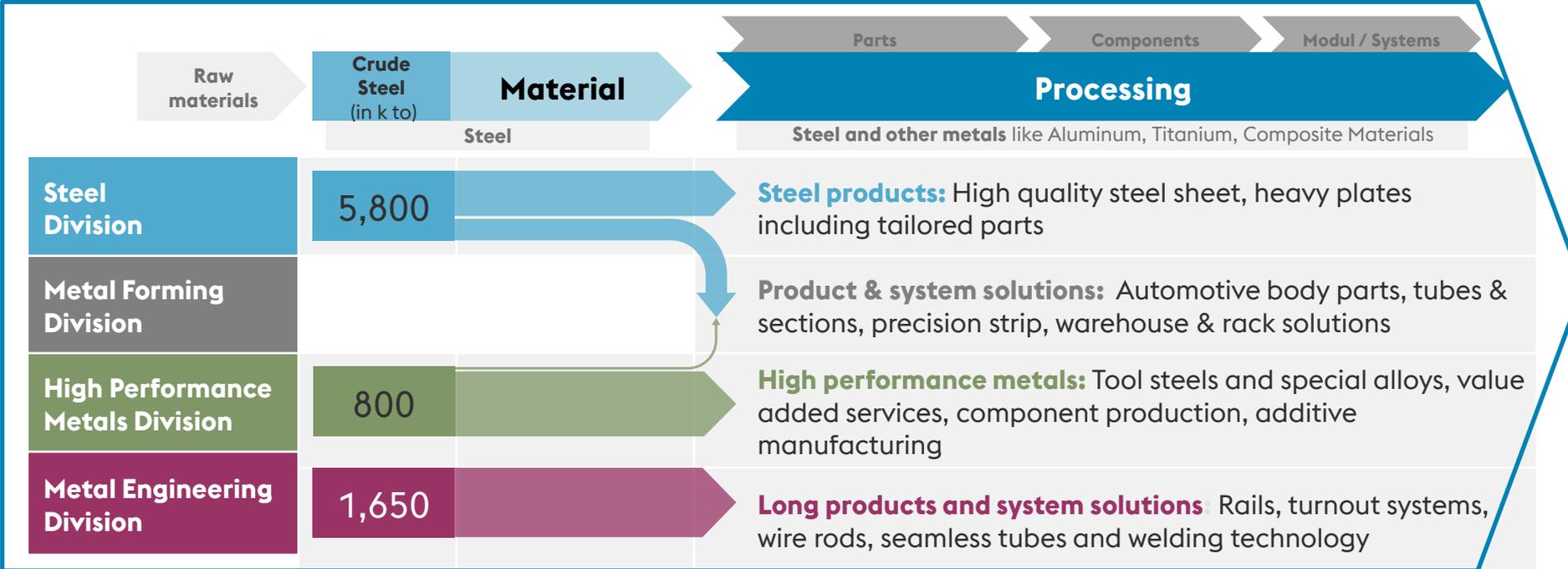
voestalpine is a technology and capital goods company as well as world leader in its business segments, with a unique combination of expertise in materials and processing. The company focuses on product and system solutions made from steel and other metals, in technology-intensive industries and niche segments with extremely high quality standards.

voestalpine's USP: COMBINATION OF MATERIALS AND PROCESSING EXPERTISE

Competitive advantage and increased customer benefits via...

- » Integrated innovation power across long value chains (e.g. additive manufacturing, press hardening steels, high ductility steels, automotive and aircraft components, bonded stacks, complete high speed rail tracks,...)
- » Comprehensive solution expertise and intense partnerships with customers (e.g. group wide technological developments with OEMs)
- » Quality leadership at finished products based on consistent material and process know how
- » Cost reduction via process efficiency based on consistently digitalized value chain management (ideal logistics, high reaction speed, efficient management of interfaces)

voestalpine's USP: COMBINATION OF MATERIALS AND PROCESSING EXPERTISE



Numbers based on normalized annual data

OVERVIEW OF INDUSTRIES



Automotive



Aerospace



Energy



Building/Construction



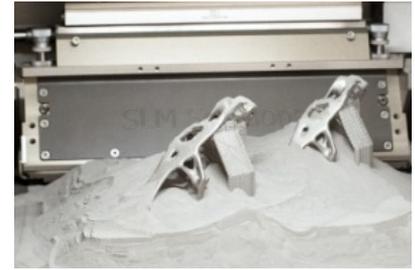
Railways



White goods/Consumer goods



Mechanical Engineering



Other

STRATEGIC CONSIDERATIONS HBI PLANT

Performance optimization
of existing plants and
improvement of marginal cost curve ✓

Optimization of energy- and
environmental footprint (reduction of
coke and consequently CO₂-costs) ✓

HBI is a proven technology with
clearly favorable conditions in the
future
(„Shale gas has changed the world“) ✓

HBI is a prerequisite for all EAF-steel
makers with a high quality steel
portfolio ✓

Group wide optimization and
growth option with
favorable cost basis and
high flexibility ✓

Modular structure as long term
strategic option possible ✓

voestalpine SPECIFIC CONSIDERATIONS HBI PLANT

- » Specific burden optimization in Linz and Donawitz
 - » Specific utilization optimization by debottlenecking of core facilities in the hot phase of the process
 - » Immediate CO₂ cost reduction in existing steelmaking process
- 

ECONOMIC CONSIDERATIONS

HBI PLANT

- » voestalpine internal use of HBI limited to 800,000 tons per year
- » Ideal economies of scale for HBI plant at a nominal capacity of 2 million tons of HBI production per year
- » Therefore sales of HBI to external customers important for economic viability of HBI plant

LONG TERM ESTIMATION GENERAL CONDITION OF HBI USAGE

Iron ore



- ✓ Worldwide good availability
- ✓ Established market
- ✓ Decreasing dominance of the top3 ore producers (>"junior miners")

Natural gas



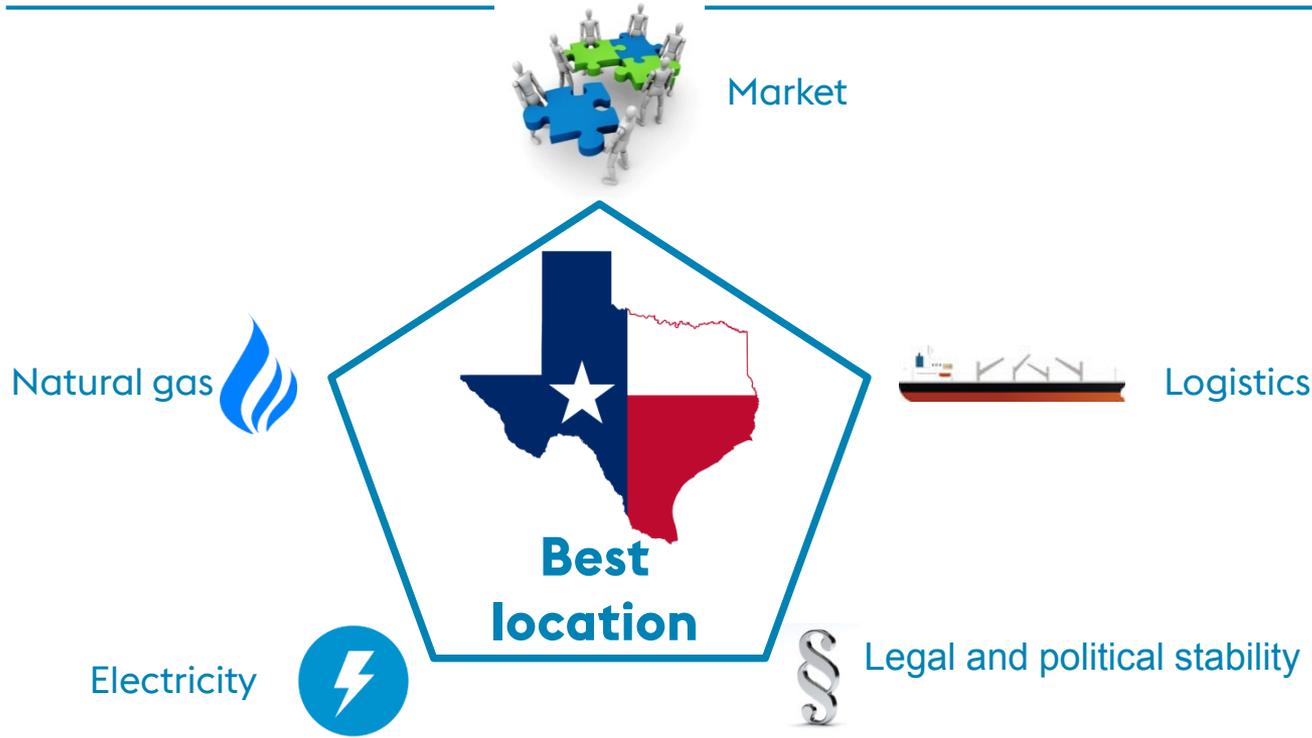
- ✓ "Shale gas"-boom (North America,...)
- ✓ Decoupling of gas and oil price
- ✓ Renaissance of DRI-production

Scrap



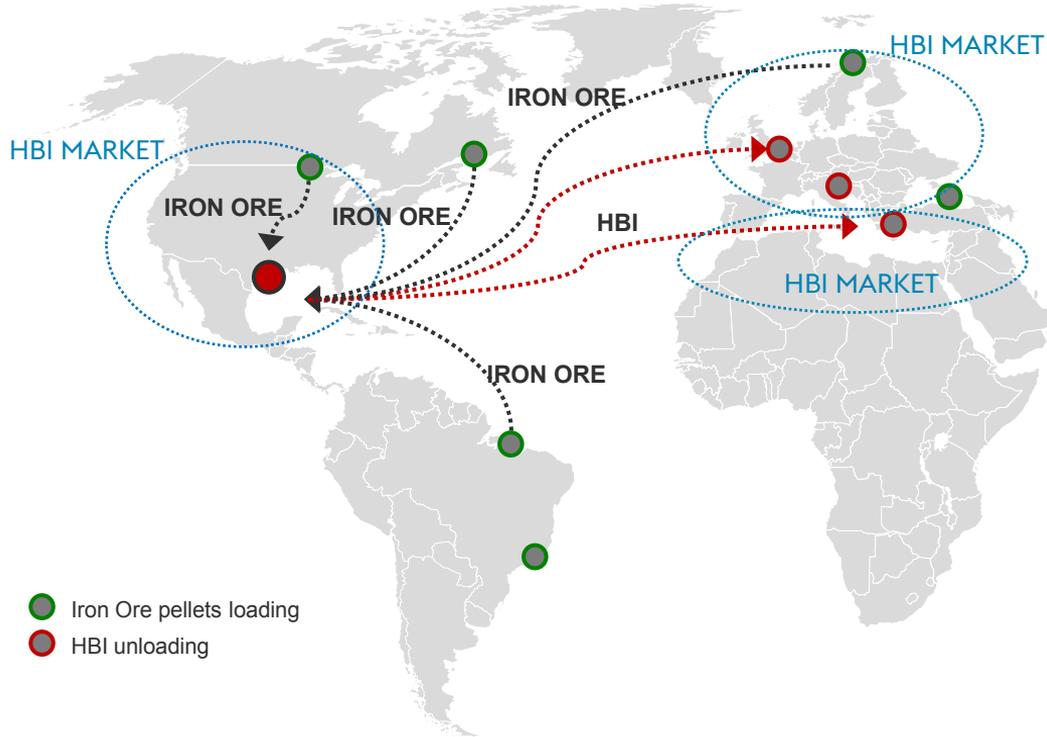
- ✓ Rising percentage of EAF-based steel mills
- ✓ Limited availability of high quality scrap
- ✓ Increasing demand for virgin iron units

WHY TEXAS AFTER ANALYZING 18 POSSIBLE SITES IN 7 DIFFERENT COUNTRIES



Cost factor	% of total cash costs FOB since 04/2010
Iron ore	70 %
Natural gas	14 %
Logistics	6 %
Electricity	2 %
Others	8 %

LOGISTIC INBOUND (IRON ORE) AND OUTBOUND (HBI)



» Optimization of logistics:

- » Iron ore pellets and HBI are transported in a circular logistic route
- » Reduction of freight cost due to better utilization of freight capacity
- » Basic possibility of pellets imports via Atlantic Ocean (Black Sea area, Northern Europe)
- » Ships can use maximum load draft of 45 ft. (13.7m) in Corpus Christi and carry load of up to 120,000 tons
- » Inland logistics in Europe unchanged to current raw material routes

voestalpine

ONE STEP AHEAD.

HBI PLANT – AN INTEGRAL PART OF voestalpine STEEL DIVISION

HERBERT EIBENSTEINER, HEAD OF STEEL DIVISION

CONSTRUCTION PHASE FACTS AND FIGURES

- » Groundbreaking: [April 23, 2014](#)
- » First product: [September 28, 2016](#)
- » Successful ramp-up phase; plant fully operational: [April 1, 2017](#)

- » Final costs: [USD 1.012 billion](#) (initial budget USD 742 million)
- » Reasons for overrun:
 - » Critical [weather conditions](#)
 - » [Cost inflation](#) due to unforeseen construction boom in Corpus Christi region
 - » [Additional](#) investments, technical optimizations and environmental measures (e.g. warehouse design, etc.)

INTERNAL USE OF HBI MAIN DRIVERS

The HBI plant is a strategic asset tailor-made to address the unique set-up of voestalpine

CO₂ Savings

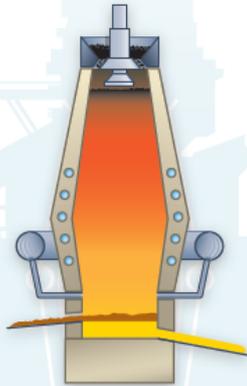
Efficiency/Productivity

Strategic Options

INTERNAL USE OF HBI

EFFICIENCY/PRODUCTIVITY INCREASE

Blast Furnace (Linz)

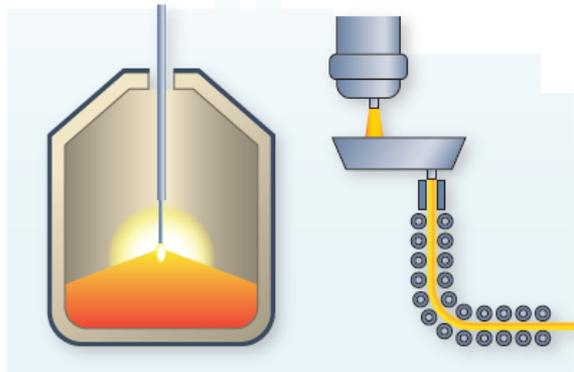


- » Bottleneck in Linz set-up: Hot metal production
- » HBI is charged as additive to regular burden
- » HBI is used as
 - » Iron source
 - » Process performance booster
 - » Reduction agent reducer
- » HBI allows for productivity increase and helps to ease hot metal bottleneck → improved utilization of downstream processes and harmonized capacities

INTERNAL USE OF HBI

EFFICIENCY/PRODUCTIVITY INCREASE

Steel Shop
(Linz and Donawitz)



- » HBI is charged via scrap chutes
- » HBI **increases scrap load density** → reduced charging times, only one scrap chute per heat → **shorter tap to tap times**
- » HBI has **low and predictable** sulphur and trace element levels → excellent scrap supplement for **high-quality steel grades**
- » HBI enhances **scrap mix flexibility** → less dependability on expensive scrap grades
- » HBI chemically **improves slag quality** (esp. Donawitz)

voestalpine HBI PLANT

STEFAN EINFALT, CHAIRMAN OF voestalpine TEXAS LLC

WHAT IS HBI AND HOW IS IT USED?

- » Premium metallic source based on iron ore pellets (direct reduction grade)
- » Process: Pellets are reduced in a shaft furnace by the means of natural gas instead of using coke in the blast furnace process
- » Fe content >90%, metallization 92-94%

Blast Furnace

Effects of HBI use

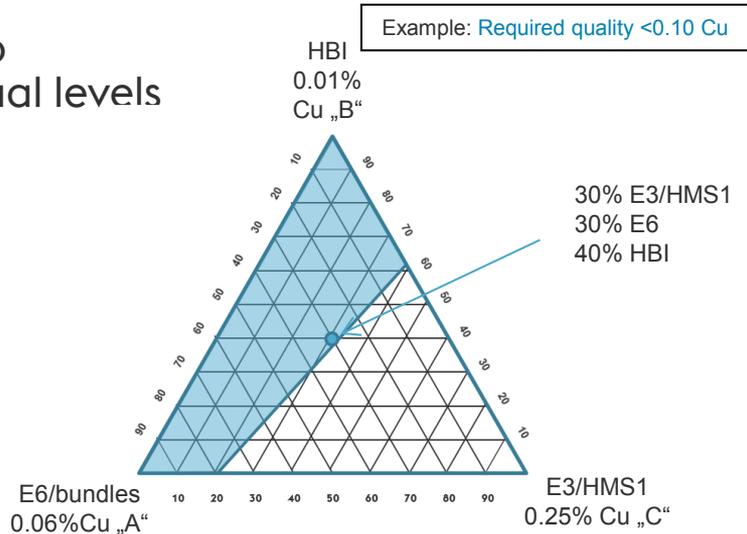
Electric Arc Furnace

- » Increases output
- » Reduces CO₂ emissions
- » Reduces coke consumption

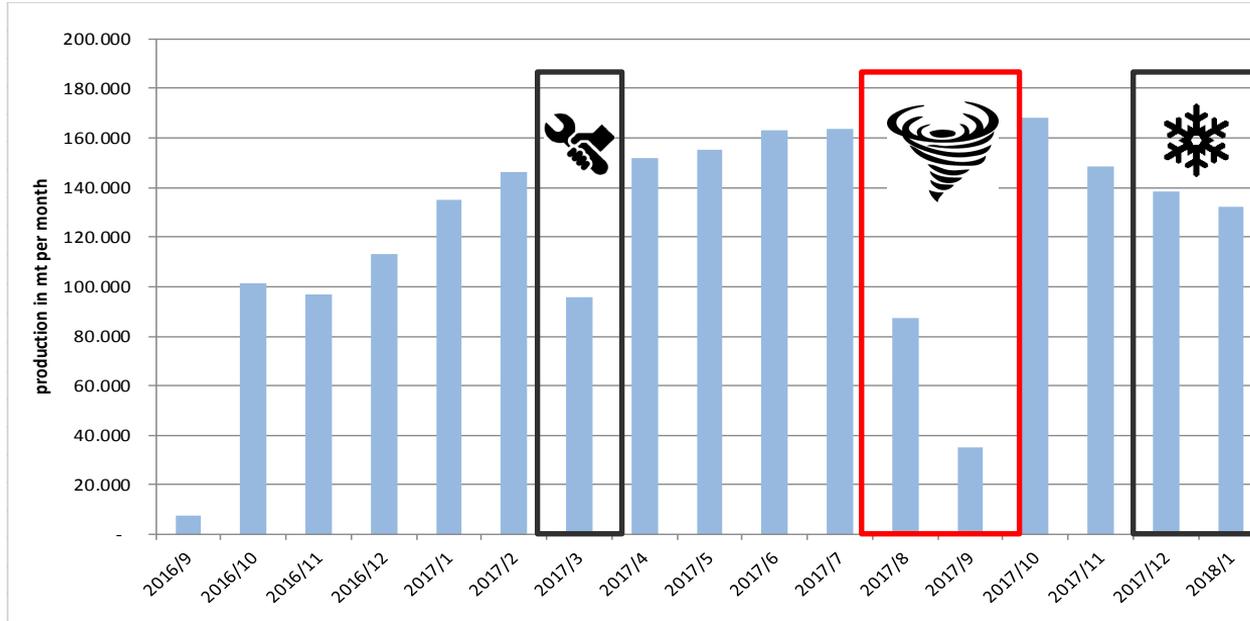
- » High-quality feedstock for most demanding steel grades
- » Attractive pig iron alternative
- » Scrap supplement

STRATEGIC RATIONALE FOR USE IN EAF (EXTERNAL CUSTOMERS)

- » Use in EAF primarily as a scrap supplement in order to produce **most demanding steel grades** with low residual levels
- » **Reduction** of scrap price risk exposure
- » **Diversification** of raw material mix
 - » Access to high quality EAF feed
 - » Optimization of feedstock
- » **Quality** push
 - » Dilution of scrap
 - » Constant low residual level
- » **Predictable** chemistry and quality (in comparison to scrap)
- » Improved **charging practice** (e.g. continuous feed systems)

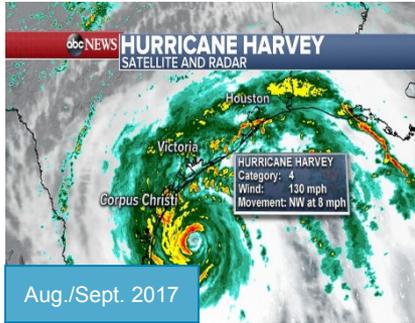


A STEEP RAMP-UP CURVE...



- » Performance test in February 2017 successfully passed
- » Promising plant utilization ratio for the first 12 months of production: 75-80% (including hot commissioning)
- » Natural disasters and maintenance issues prevented an even higher production rate in year 1
- » Customer acquisition started years prior to start of operation – all product sold

...BUT WE LIVED IT ALL IN JUST ONE YEAR



“Harvey was the strongest landfall in this area, known as the Texas Coastal Bend, since Hurricane Carla, in September 1961.”

Consequences:

- » Plant shutdown
- » Port closure
- » Repairs at plant
- » Loss of production



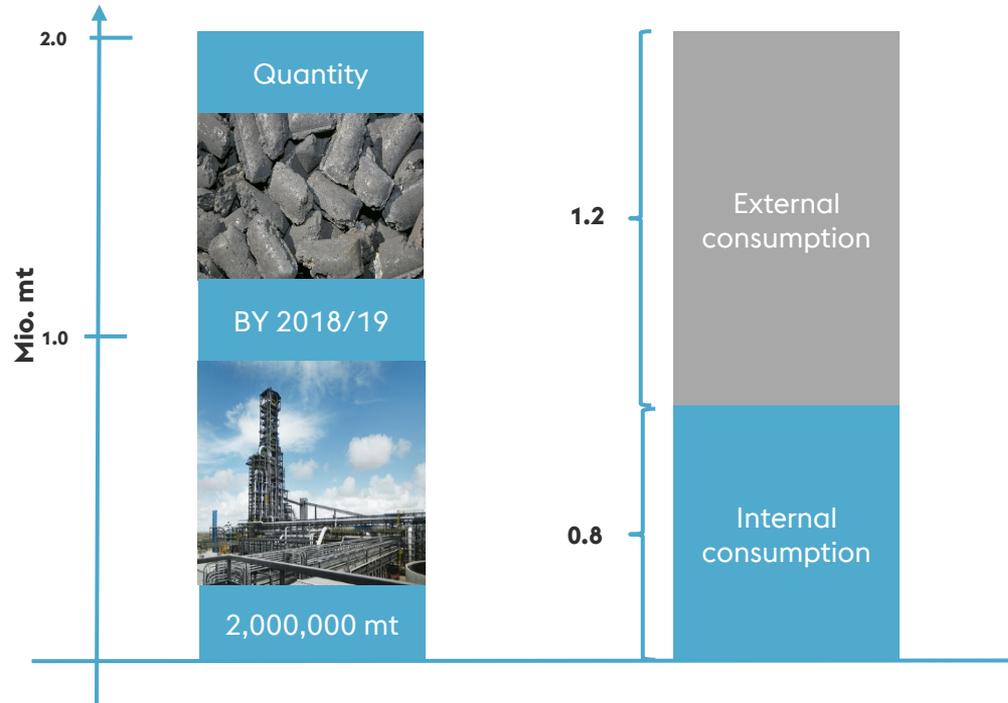
“This was the first wintry precipitation event in South Texas since the icing event on January 23rd-24th 2014, and the first measurable snow event since the Christmas Snowstorm of 2004.”

Consequences:

- » Equipment failure
- » Supply issues caused by low temperatures
- » Gas price spikes

SALES STRATEGY

ALLOCATION OF QUANTITIES



Total production since start-up:
>2.1 millions metric tons

Top 5 destinations:

- » Austria
- » Mexico
- » USA
- » Spain
- » Italy

SALES STRATEGY AND USP

Strategy

- » Focus on customers that use HBI as a scrap supplement, not a substitute
- » Differentiate by product quality
 - » Carbon content > 1.5% increases yield
 - » Metallic iron content: 85-87% achieved
 - » Ultra low gangue, phosphorus and sulfur levels
 - » Screening material prevents fines (>increases yield again!)
- » Best service performer
- » Offer HBI on long-term basis

USP

- » Differentiation by product quality
- » Reliability and best-in-class service (direct deliveries – without traders involved)
- » Continuous supply (especially in US with small barge-lots) guarantees lower working capital
- » Deep sea port and favorable logistics into US (by barges) or also international destinations in NAFTA, Maghreb or Europe

POSITIVE MARKET OUTLOOK

» Short-term

- » Positive market sentiment prevails over next view months
- » Demand currently exceeds supply – several customer inquiries cannot be fulfilled (e.g. Mexico, US, Southern Europe, MENA, South Korea)

» Mid-term

- » President Trump's section 232 measurements could further bolster good environment for steel industry (higher utilization rates of US steel mills trigger higher scrap consumption, hence higher metallics demand)

» Long-term

- » Shift towards EAF steelmaking in NAFTA and other regions fosters use of prime metallic
- » Top steel grades to be produced via EAF route



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