



Opening of the voestalpine Direct Reduction Plant

Press conference – Corpus Christi, Texas

October 26, 2016



voestalpine: An Overview

Wolfgang Eder, CEO of voestalpine AG

voestalpine Group

Overview

- European technology and capital goods group that has its own steelmaking facilities
- Leading partner to the global automotive and consumer goods industries and the oil and natural gas industry
- Global market leader in high-tech railway infrastructure (rails, turnouts) as well as tool steel and special sections
- Listed on the Vienna Stock Exchange since 1995 – owned 100% by private shareholders
- Ecological pioneer – benchmarks for emissions and energy efficiency
- Worldwide investment volume in the BY 2015/16: EUR 1.3 billion (~USD 1.5 billion*)

* Exchange rate: March 31, 2016 (end of Business Year 2015/16)

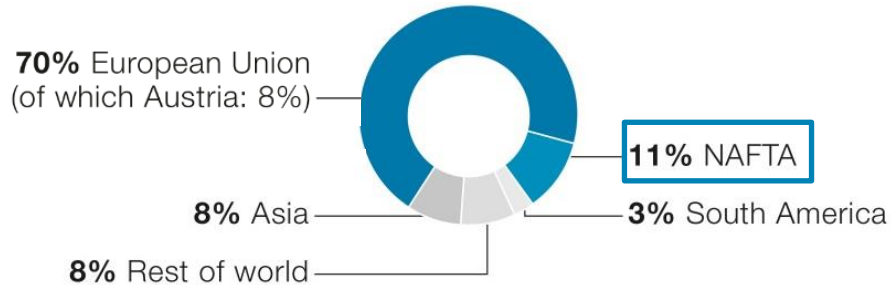


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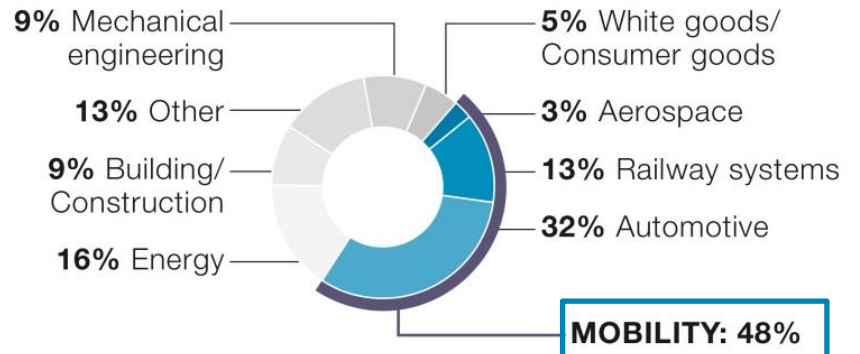
Global footprint

One Group – 500 locations – 50 countries – five continents

Revenue by **regions** (Business year 2015/16)



Revenue by **industries** (Business year 2015/16)



Revenue (BY 2015/16)
EUR 11.1 billion (~USD 12.6 billion*)

EBITDA (BY 2015/16)
EUR 1.6 billion (~USD 1.8 billion*)

Employees (BY 2015/16)
48,500

* Exchange rate: March 31, 2016 (end of Business Year 2015/16)

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ONE STEP AHEAD.

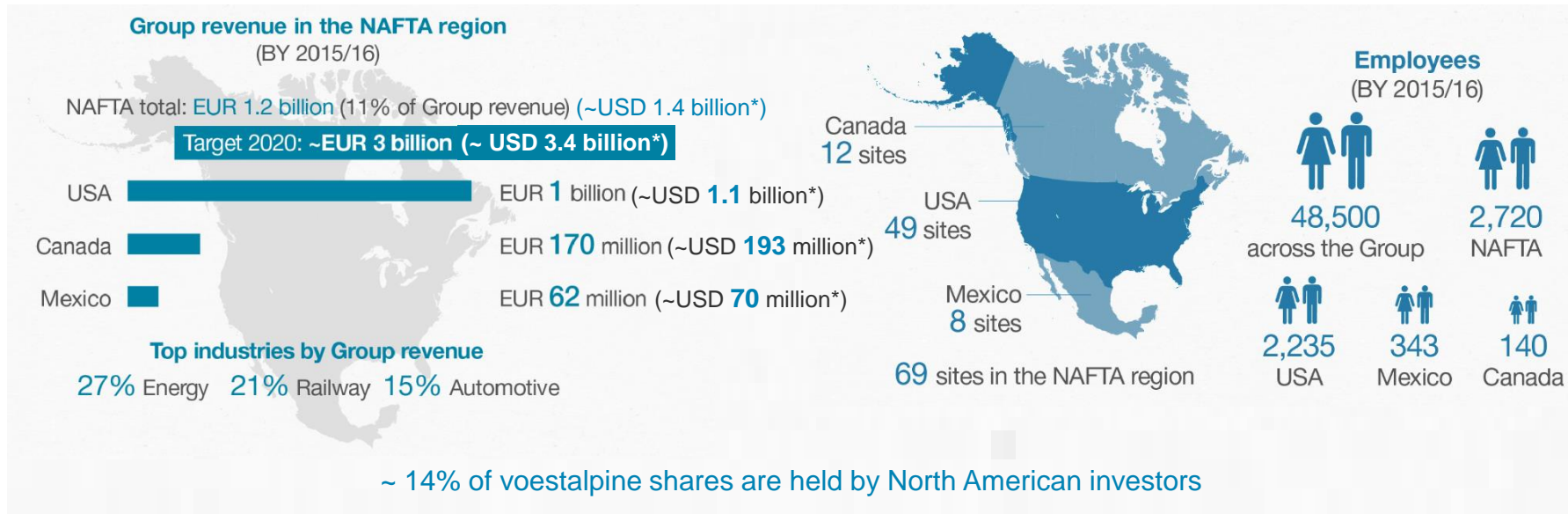
A light gray world map is centered in the background of the slide. The text is overlaid on the map.

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Accelerated expansion in the NAFTA region

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Focus on the NAFTA region



* Exchange rate: March 31, 2016 (end of Business Year 2015/16)

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NAFTA region – current projects (in addition to HBI)

- **Short-distance traffic (railways):** major orders (turnouts/signaling technology) in New York, Los Angeles, San Jose, Seattle, Toronto, San Francisco
- **Special Steel:** new location for **high-tech coating** in Queretaro, Mexico
- **Automotive safety components:** acquisition of Summo Corp., Canada
- **Automotive components:** expansion of plant in **Cartersville, Georgia** – major order of **USD 500 million** → investment USD 60 million including new site in **Birmingham, Alabama**
 - 400 new jobs by 2020
 - Cartersville: first NAFTA site for **high-tech hot forming** of ultra high-strength steel (press-hardening steel – phs-ultraform®)
- **Aircraft components:** expansion of forged parts and special sections





voestalpine Direct Reduction Plant

The beginning of a new era

Direct reduction plant in Texas

Why USA?

- Politically stable environment that is predictable in the long term; professional cooperation with authorities
- Logistically central location (deep-sea access to Gulf of Mexico)
- Business-friendly environment:
 - Political arena and society have high degree of affinity for industry
 - Attractive, WTO-conforming investment subsidy
 - Cost-efficient energy supply with concurrently high environmental standards:
 - Average price for electricity in Austria double the price in the USA¹⁾
 - Long-term average price for natural gas in Austria around three times as high¹⁾
 - Lower tax and levy rate (*in % of GDP: 27% USA vs. 43% AUT*²⁾)

¹⁾Source: IEA ²⁾Source: OECD

Direct reduction plant in Texas

Facts & figures (1)

Largest ever US investment by an Austrian company
Largest and most modern facility of its kind worldwide

Basic investment:	EUR 550 million / USD 740 million*
Total area:	2 square kilometers
Capacity:	2 million tonnes of HBI annually → 40% own needs / 60% external customers
Construction period:	28 months
Start of production:	September 28, 2016
Jobs:	190



* Exchange rate at the beginning of the project in 2014

Direct reduction plant in Texas

Facts & figures (2)

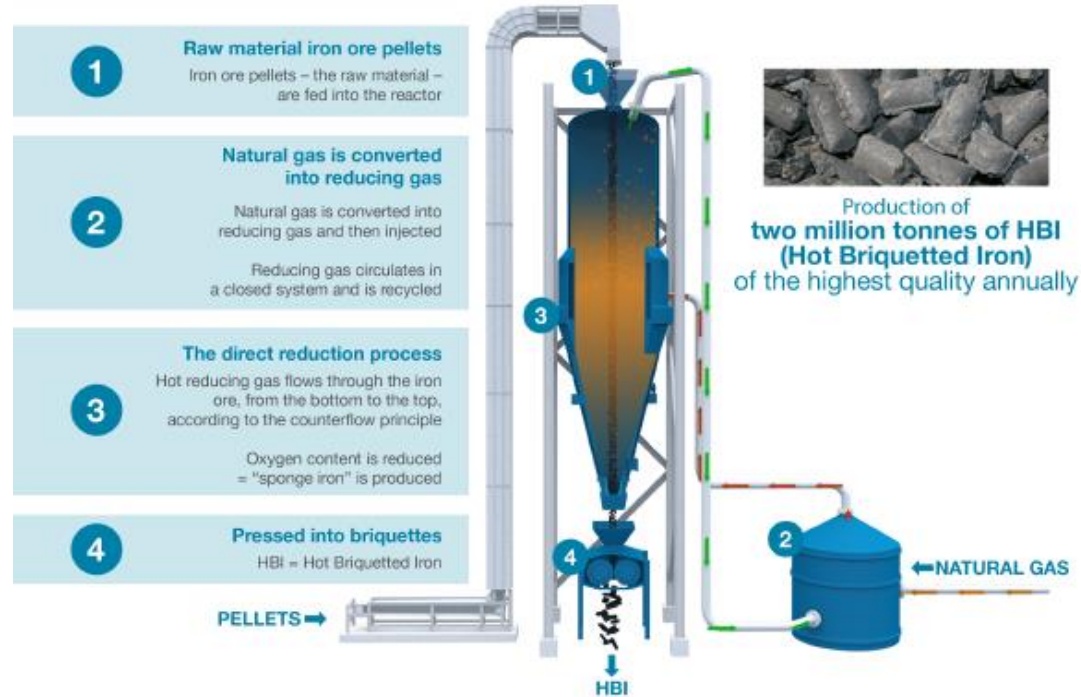
Full capacity utilization for the next four years ensured

Plant has own deep-sea port:	5 million tonnes of material handled annually: <ul style="list-style-type: none">▪ in-bound delivery of around 3 million tonnes of iron ore pellets▪ out-bound delivery of around 2 million tonnes of HBI
Reduction tower:	137 m high – highest building in southern Texas
Regional value creation:	around USD 600 million until 2025



Direct reduction plant in Texas

Process based on environmentally friendly natural gas



Direct reduction plant in Texas

Environmental benchmark and bridging technology for the future

Environmental protection is a top priority

- Seawater used for cooling and process water → conservation of freshwater resources
- Innovative logistics concept with return loads → avoidance of empty trips
- Completely closed warehouse for iron ore pellets → minimal dust emissions



Utilization of natural gas instead of coke/coal → bridge to future technologies

- Group-wide CO₂ reduction of around 5 percent by utilizing HBI
- Long-term goal: de-carbonization of steel production
 - Step-by-step transition from coal via natural gas (direct reduction plant) to utilization of CO₂-neutral hydrogen in the long term
 - Future potential: use of “green” hydrogen instead of natural gas in the HBI plant
 - Production of hydrogen is a focal point of research activities (pilot facility in Linz)



Long-term scenario

Hydrogen for lower CO₂ emissions in steel production

■ Developing direct reduction further

Current status: direct reduction of iron ore into HBI (sponge iron) using natural gas

- **Prospects for the future:** when sufficiently available, in future **hydrogen** will replace natural gas as **reducing gas**
- **Next stage in development:** **using the HBI** produced in this way **in the electric arc furnace** powered with **electricity generated by renewables** (in place of the blast furnace/LD steelmaking route)
- **Long-term scenario (after 2035):** **blast furnace route** also **based on hydrogen** instead of coke/coal



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