

# 2 MTPY MIDREX® HOT BRIQUETTED IRON PLANT VOESTALPINE TEXAS LLC, TEXAS, USA

## **CORPUS CHRISTI, TEXAS, USA** THE BIGGEST **OVERSEAS** INVESTMENT OF VOESTALPINE

#### MAIN BENEFITS

- Safe and clean ironmaking due to direct reduction based on multiple references
- HBI production for the voestalpine group and
- furnaces allowing for

- Reduced specific CO<sub>2</sub> emissions
- briquetting plant for briquetting of fine iron ore dust and sludges

## THE SOLUTION

Primetals Technologies and consortium partner Midrex Technologies, Inc. received an order from the Austrian voestalpine group to build a direct reduction plant in the United States. The Midrex plant is constructed near the Reduction takes place in a low-pressure reduction shaft city of Corpus Christi, Texas. It is designed to produce two million metric tons of hot briquetted iron (HBI) per year,

making it the largest single module of this type worldwide. The order value for the consortium is in the three digit million Euro range. Operation of the plant started in September 2016.

## **VIRTUAL REALITY EXPERIENCE**

THE CHALLENGE

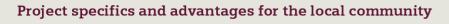
Primetals Technologies has developed an app for iOS and Android devices with which you can inspect the Corpus Christi plant in a three-dimensional environment. For the full experience, please use the app with Google Cardboard glasses or a comparable 3D viewer.



primetals.com/vr

The direct-reduction process removes the bonded oxygen from pelletized iron ore at elevated temperatures by means of a reducing gas that is generated from natural gas.

by reduction gas that was generated by natural gas reformation and heating in a natural gas reformer. The iron ore pellets that are charged into the reduction shaft through feed pipes, are reduced to metallic iron by the reduction gas in counterflow, are discharged and finally briquetted to high quality HBI. Due to the utilization of natural gas (and not coke as reducing agent as in the traditional blast furnace route), the process is considered to be environmentally friendly. As a result also carbon dioxide emissions are considerably reduced.





(50,200 m<sup>2</sup>)

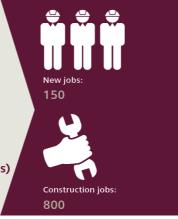


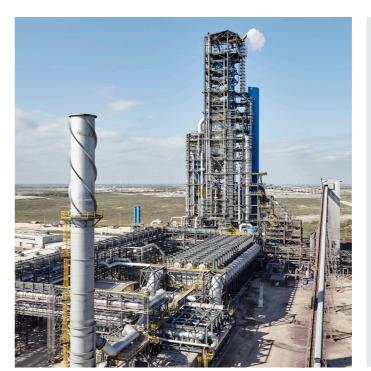
(45,300 m<sup>3</sup>)



Mechanical equipment: 13,000 short tons (11,800 metric tons)







HBI plant tower and reformer

## **SCOPE OF SUPPLY**

- Mechanics
- Furnace feed conveyor
- Hot briquetting system
- Hot fines recycling system
- Cooling conveyors and vapor removal system
- Seal gas system
- · Utilities and water treatment plant
- Natural gas reducing station
- Air compressor station
- Water treatment plant incl. sea water cooling towers
- Raw water treatment (reverse osmosis)
- Electrics, instrumentation and automation
- Power distribution and emergency power supply
- Medium voltage motors
- Level 1 and Level 2 systems including material handling
- Instrumentation
- Motor control centers
- · Metallurgical services
- Laboratory
- · Balance of plant
- Maintenance cranes/hoists
- Basic engineering buildings

THE CUSTOMER

Name: voestalpine Texas LLC

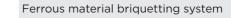
Location: Corpus Christi Bay, Texas, USA

voestalpine Texas LLC is the local presence of the voestalpine group in the south of Texas and a 100% subsidiary of voestalpine AG.

With an annual steel production of 7.8 mtpy, voestalpine is the biggest steel producer in Austria. Headquartered in Linz/Austria, voestalpine has over 500 companies in 50 countries on 5 continents. The group itself has around 47,000 employees and stands out for its high quality products and high sense of responsibility for the environment. It is one of the leading partners for Europe's automotive sector and for oil and gas industries worldwide.

### **PLANT DATA**

Input	DR grade oxide pellet
Annual capacity	2 mtpy HE
Reduction furnace inner diameter	7.15 r
Number of reformer bays	2
7 briquetting presses including DRI hot fines recycling	
2 HBI cooling conveyors	
Sea water cooling circuit	



Oxide coating system



Hot briquetted iron

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