



# Long-term Price Forecast of Nickel Industry

# Long-term Price Forecast of Nickel Industry



## OBJECTIVES

- The client is a stainless steel production company that is highly concerned about the price of NPI, a raw material. At the same time, As NPI gradually develops overcapacity, the client wants to know the price trend of NPI in the next few years.

## PROCESS

- Methodology
  - ▶ Using the NPI supply/demand balance to determine the overall trend
  - ▶ Plotting future cost curves for major NPI companies to finalize accurate pricing through demand
- Sample Size
  - ▶ NPI (30), Stainless Steel (10)
- Project Time
  - ▶ 8 weeks

## DELIVERABLES

- Global supply and demand balance of NPI, 2017-2030E
  - ▶ Forecast of NPI capacity and production, 2017-2030E
  - ▶ Forecast of NPI demand, 2017-2030E
- NPI Price Forecast, 2017-2030E
  - ▶ Supply and demand
  - ▶ Policy
  - ▶ Macro economy
- Cost Curve of NPI Smelters, 2017-2030E
- Gross Profit Forecast, 2023-2030E

# NPI Price Forecast

## Methodology

### Oversupply: 2023-2029

Only part of the companies in the market enjoy certain profit, and some companies with higher cost may have losses.

Cost curve analysis to forecast the price

### Lack of Supply: 2030

All the companies in the market could enjoy certain profit

Profit increases based on the average production cost to forecast price

## NPI Price Forecast (2017-2030E, VAT Excluded, USD/Metal Ton)



Source: SMM

# Cost & Price Forecast

## Cost Curve of NPI Smelters in 2024

Production Cost (USD/metal ton)

● Total Cost in 2022

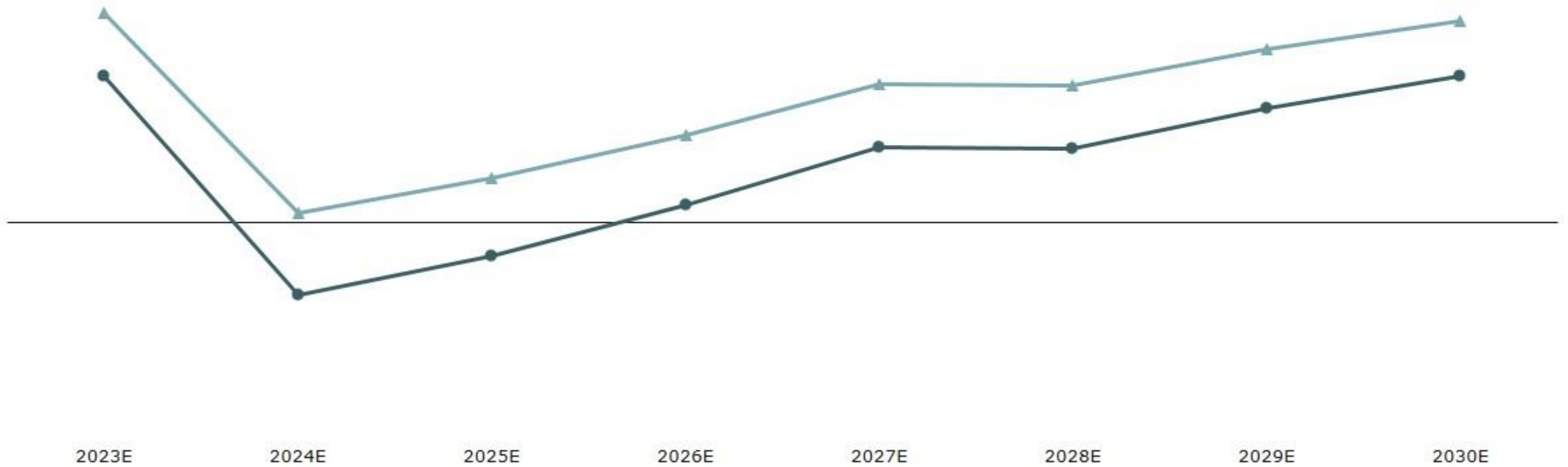


Note: 1. The main reason for high costs of BF process in China is that the grade of NPI produced is only 1.5-1.6%. Even costs of BF is high, low-grade NPI produced by BF process in China still has its market demand.  
 2. Large RKEF smelters in China produce NPI with a lower grade at 7-8%, resulting in higher cost than medium RKEF smelters.

# Profit Analysis

## Gross Profit Forecast (2023-2030E, %)

● Average Gross Profit Margin ▲ Gross Profit Margin in xx



Source: SMM

# Supply Forecast

## Global NPI Capacity Forecast, by Country (2017-2030E, Kilo MT Ni)

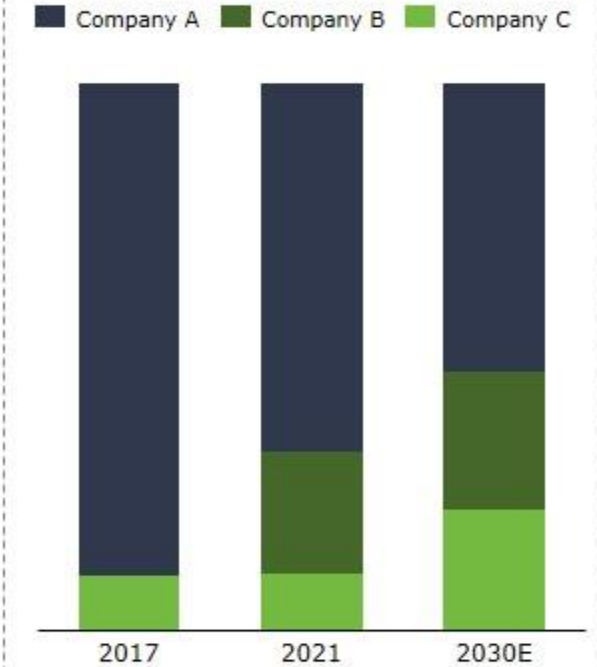


### Assumption for NPI Capacity Transferring to Matte:

1. The demand for nickel sulfate is high and other raw materials such as MHP is not enough for nickel sulfate demand
2. Oxygen-Rich Side Blow processing technology is expected to be medium competitive comparing with the Tsingshan technology
3. The transfer is not expected to turn back due to oversupply situation of NPI till 2030

- Both China and Indonesia will enter a plateau in 2025 after a period of rapid expansion in Indonesia from 2017 to 2024.
- Capacity in China is shrinking, while capacity in Indonesia is gradually expanding, mainly due to the guidance of Indonesia's mining ban policy.
- Due to lack of other raw materials of Nickel sulfate, such as MHP, in 2023 and 2024, the capacity transferring from NPI to nickel matte is expected to increase. Since 2025, the supply of other raw materials is expected to be enough for nickel sulfate, unless the demand of nickel sulfate increases beyond expectation.

## Capacity Breakdown in Indonesia (2017, 2021, 2030E)



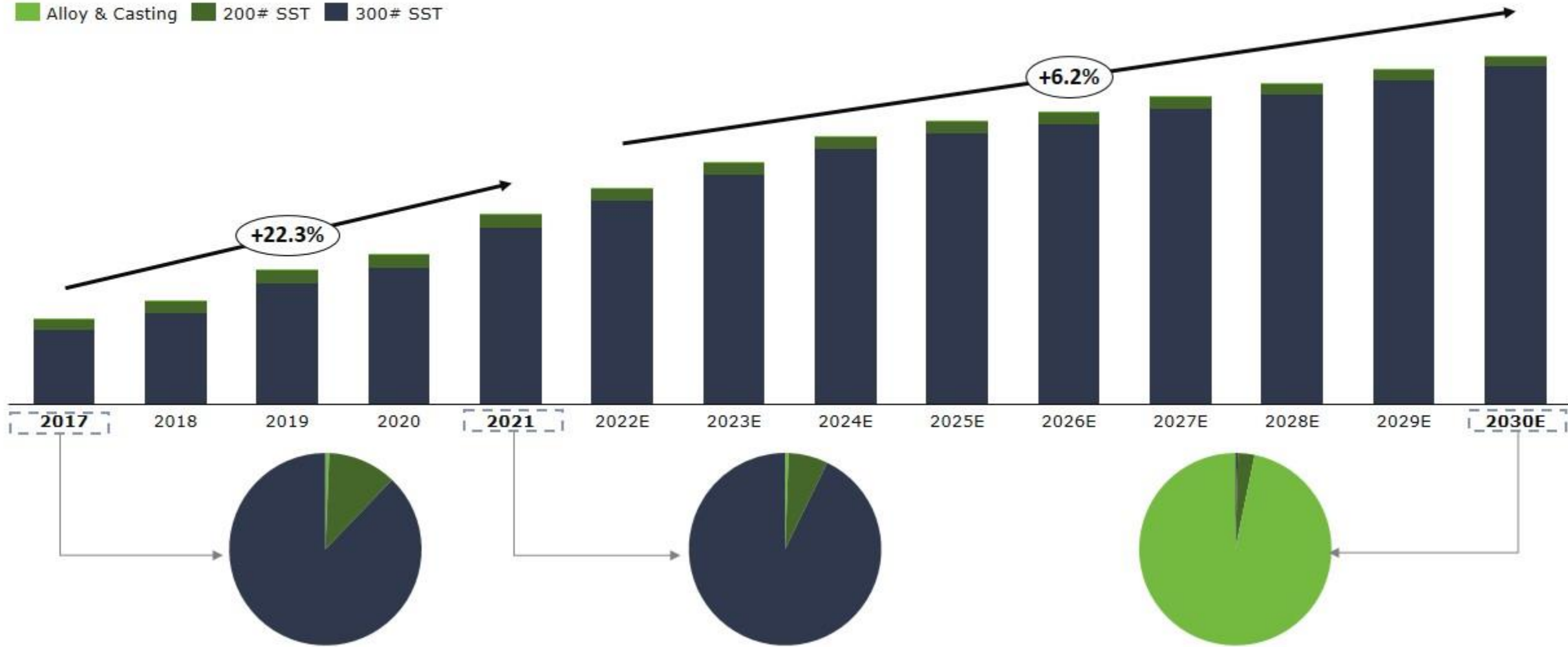
- From 2017 to 2021, the market structure has evolved from a monopoly by xx to oligopoly by xx and xx.
- Small players are also expected to take more market shares by 2030E, comparing with 2021.



# Demand Forecast

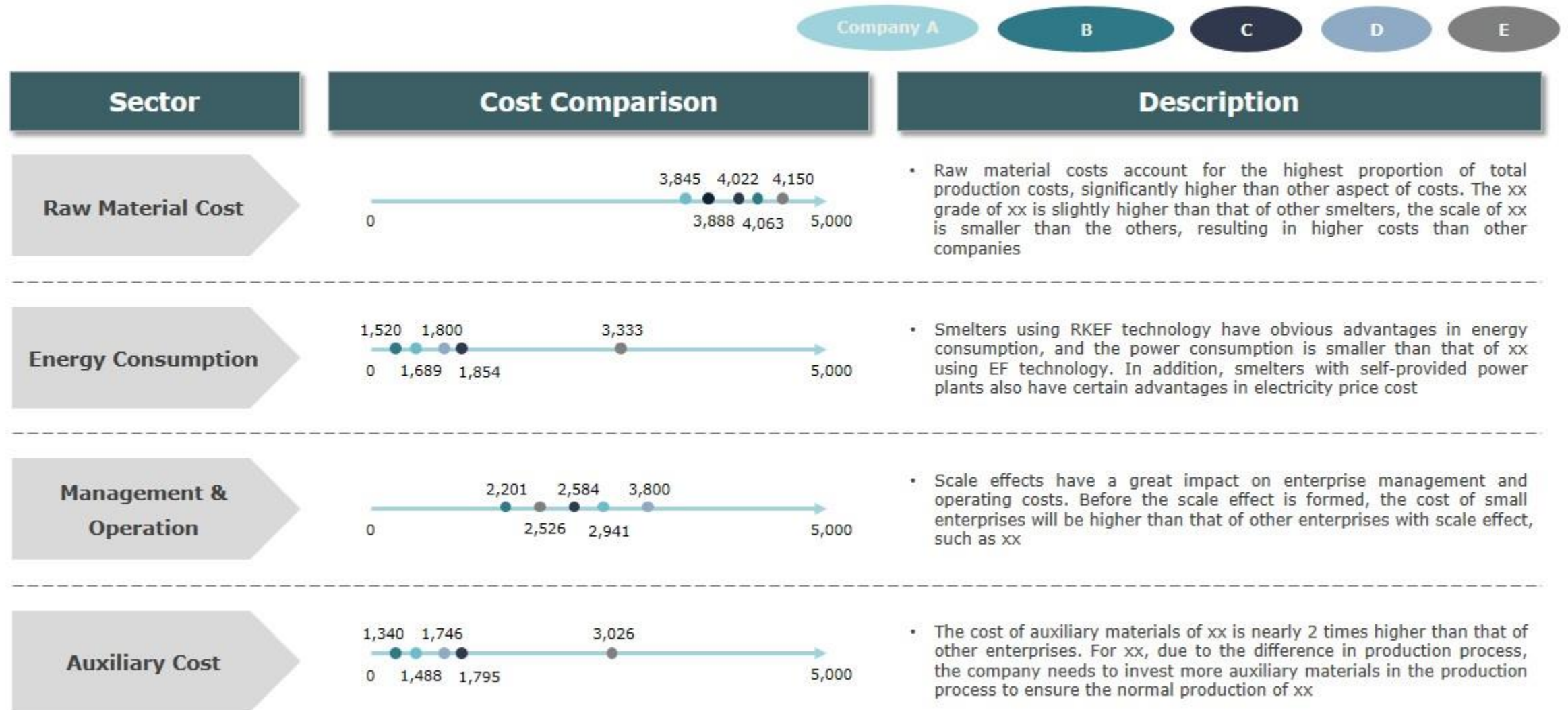
Global Total Demand Forecast, by End Use (2017-2030E, Kilo MT Ni)

Alloy & Casting 200# SST 300# SST



Source: SMM

# Cost Comparison



Unit: USD/Metal Ton

Source: SMM

- Raw material costs account for the highest proportion of total production costs, significantly higher than other aspect of costs. The xx grade of xx is slightly higher than that of other smelters, the scale of xx is smaller than the others, resulting in higher costs than other companies

- Smelters using RKEF technology have obvious advantages in energy consumption, and the power consumption is smaller than that of xx using EF technology. In addition, smelters with self-provided power plants also have certain advantages in electricity price cost

- Scale effects have a great impact on enterprise management and operating costs. Before the scale effect is formed, the cost of small enterprises will be higher than that of other enterprises with scale effect, such as xx

- The cost of auxiliary materials of xx is nearly 2 times higher than that of other enterprises. For xx, due to the difference in production process, the company needs to invest more auxiliary materials in the production process to ensure the normal production of xx