

## **Iron Ore Market Fundamentals Masterclass**

A flexible one or two day course covering industry drivers & developments including international demand and reviews of geology, geography, industry structure, processes, markets, pricing and future developments.

The course can be structured and shortened to meet client's requirements and is ideal for personnel with limited Iron ore knowledge as well as those with a general understanding seeking more in-depth information.

### **Key Learning Outcomes**

- Iron ore geological genesis, major types, typical grade and physical properties
- History of the modern iron ore industry
- Global major producing regions and trends
- Extraction, processing and products
- Metallurgy and applications of iron ore
- Land and sea transportation
- Major iron ore producers – operations, products and future plans
- Major steel producers – operations, products and future plans
- Contract terms and pricing mechanisms
- Industry issues – consolidation and international influences

## **Basic Master Class Course Outline – 2 Days**

### **1. Geology**

- Genesis of iron ores
- Major ore types
  - Occurrence – bedded, channel and detrital deposits; BIF, taconite, itabirit
  - Analysis of their formation and relationship with each other
  - Hematite, magnetite, goethite, exotic
- Typical chemical grades and physical properties

### **2. Where is it?**

- Global distribution
- Historical, current and future producing regions
- Analysis of major producers on country by country basis - details and issues.

### **3. How is it Used?**

- The Iron and Steel Industry
  - History of development
  - Review of current status
- Other uses of iron ore.

### **4. Extraction and Processing of Iron Ore**

- Underground, open cut mining, including methods and equipment
- Mineral dressing, including specific processes used for different ore types
- Blending, why and how.
- End products including details of physical and chemical properties.

## 5. Transport

- Land and water based transport of ore, current and future.
- Major trade routes
- Major loadports and discharge ports

## 6. Metallurgical Processes

- BOF/BF
  - Raw material preparation
  - Plant configuration/flowsheet
  - Intermediate processes (pelletizing, sintering, coke-making)
  - End products
- DRI/HBI/EAF
  - Raw material preparation
  - Plant configuration/flowsheet
  - Intermediate processes (reduction, smelting)
  - End products
- Direct Smelting
  - Raw material preparation
  - Plant configuration/flowsheet
  - Process
  - End products
- Value in Use
  - What is it? How is it calculated?
  - How is it used?

## 7. History of the Modern Iron Ore Industry

- The early years, what were the economic and political drivers?
- The role of the Japanese Steel Mills
- The genesis and detail of benchmark pricing.
- Where is the industry at today?

## 8. Major Iron Ore Producers

- Details of operations, capacities and future plans of
  - Vale
  - Rio Tinto
  - BHP Billiton
  - Fortescue Metals
  - Arcelor Mittal
  - Anglo American
  - LKAB

## 9. Major Consumers

- Arcelor Mittal,
- Hebei Steel Group
- Baosteel Group
- POSCO
- JSM's

## 10. Terms of Trade

- Market Structure
- How iron ore is sold
  - Types of contracts, FOB, CFR, FAS etc
  - Long term or spot contracts
  - Structure of contracts
  - Pricing mechanisms

## 11. Market Dynamics and Issues

- Supply and demand, including past and current forecasts
- The role of the BRICS and the gap in steel intensities
- Industry consolidation